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ABSTRACT

The monograph presents 19 papers on severe behavior disorders, including issues related to teacher training, school problems/school intervention, autism, and juvenile delinquency. The following papers are included: "Issues in Training Teachers for the Seriously Emotionally Disturbed" (F. Wood); "The Field-Based Special Education Teacher Training Program of Behaviorally Disordered Children" (M. Kerr, et al.); "The Inservice Consultant--A Role for Teacher Trainers Working with Behavior Disorders in the Schools" (B. Marotz-Sprague, C. Nelson); "The Program Manager--A New Role for Teachers of the Severely Handicapped" (R. Dever, D. Knapczyk); "Teacher Directed Interventions with Behaviorally Disordered Children" (S. Zucker, et al.); "The IEP as Single-Subject Serendipitous Research" (D. Eyde, A. Fink); "Recent Developments in the Field of Behavior Therapy--The Evolution of Cognitive Behavior Modification" (K. Howell); "The Relationship between Cognitive Profiles, Level of Academic Achievement and Behavior Problems" (C. Letteri); "Perceived Roles and Behaviorally Disordered Minority Students" (K. McCoy, A. Prieto); "Normative Behavioral Observation Data as a Standard in Classroom Treatment of Educationally Handicapped Children" (S. Forness); "Enhancing the Prosocial Behavior of Severely Behavior Disordered Children" (J. Hendrickson, R. Gable); "A Review of Learning Research in Autistic Children" (M. Kaufman, H. Clark); "Severely and Profoundly Disturbed Children--The IEP and the Least Restrictive Alternative" (R. Cline, E. Guetzloe); "Research in the Modification of Deviant Behavior of an Autistic Child--A Preliminary Report" (R. Neel, F. Billingsley); "Ecological Assessment of Programs for Children with Severe Behavior Disorders" (L. Brousard, C. Dietrich); "A Descriptive Profile of the Adjudicated Adolescent--A Status Report" (L. Bullock, T. Reilly); "The Relationship between Learning Disabilities and Juvenile Delinquency" (S. Swartz, S. Wall); "The Emotionally Disturbed Delinquent Adolescent--Manifestation of Physical and Sexual Abuse" (S. Bavolek); and "Dynamics of Overt Aggression and the Behavior Disordered Adolescent" (R. Fritsch). (CL)

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Summer 1979

MONOGRAPH
in Behavioral Disorders

Severe Behavior Disorders of Children and Youth

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The Council for Children with Behavioral Disorders is a national professional organization for those interested in the education and well-being of behaviorally disordered individuals. The Council functions to develop lines of communication and interaction among professionals, disciplines and organizations; to promote adequate programs for recruitment, training and consultation; to encourage research and development; to support legislation for services to these children. Toward this end, the Council publishes a quarterly journal, *Behavioral Disorders*, and sponsors national conferences in relation to these interests. An organization of some 4,400 members, the Council maintains central offices at 1920 Association Drive, Reston, Virginia 22091.

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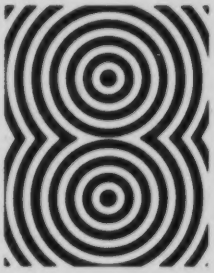
MONOGRAPH in Behavioral Disorders



Severe Behavior Disorders of Children and Youth

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Arizona State University, Teacher Educators for Children with Behavioral Disorders, and Council for Children with Behavioral Disorders

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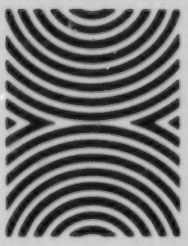

Preface

This Monograph is the second in a series of Monographs devoted to advancing the body of knowledge in the area of severe behavior disorders of children and youth. It represents an effort to examine the most recent practical innovations in the delivery of services to these children, as well as the most current research efforts being carried out in a systematic attempt to better understand this phenomenon.

A majority of the papers herein are a result of presentations made at the Teacher Educators for Children with Behavior Disorders/Arizona State University Conference on Severe Behavior Disorders of Children and Youth, held on the Arizona State University campus at Tempe, November 16, 17 and 18 1978.

This issue of the Monograph has been organized into specific topical areas which reflect the major foci of the conference. The specific areas addressed are: (1) Teacher Training, (2) School Problems and School Interventions, (3) Autism, (4) Juvenile Delinquency.

The editors would like to thank the Bureau of Educational Research and the Department of Special Education at Arizona State University for their cooperation and support for both the Conference and this Monograph. In addition, we would like to thank Dr. Robert Stout, Dean of the College of Education at ASU for making this endeavor possible.

We would further like to acknowledge the Council for Children with Behavior Disorders for their endorsement of the conference and Dr. Albert Fink and Dr. Donna Eyde for their skill and expertise in organizing this material and making this second Monograph a reality.

Robert B. Rutherford, Jr., Ph.D.
Alfonso G. Prieto, Ph.D.

ISSUES IN TRAINING TEACHERS FOR THE SERIOUSLY EMOTIONALLY DISTURBED

Frank H. Wood

INTRODUCTION

Developing a statement on current issues for a group with the broad membership of the Council for Children with Behavior Disorders and Teacher Educators of Children with Behavior Disorders has been an exciting challenge. In 1977, a group of us sat with Dr. Gweneth Blacklock Brown to develop a list of priority needs which might assist the Bureau of Education for the Handicapped–Division of Personnel Preparation staff in making decisions about future funding for training. In preparing these comments, I drew from that discussion and from many less formal discussions with people in our field, parents, teachers, students, teacher educators, and friends of students with special needs related to emotional disturbance and behavioral disorders. These remarks represent my own personal processing of an ongoing review of field needs and our response to them.

Definitions

What is "serious emotional disturbance?" Who is a "seriously emotionally disturbed student?" How many "seriously emotionally disturbed children and youth " are there in the United States? Is this child so "seriously emotionally disturbed?" as to need and be eligible for special education services? Are the "seriously emotionally disturbed" students in the special experimental class similar to the "seriously emotionally disturbed" students in the control group? Which of these students' "seriously emotionally disturbed" behaviors are the targets of the proposed intervention program? What will be considered a satisfactory rate or amount of change? Can you please specify the frequency of occurrence of the behaviors you are labeling "disturbed?"

It is a mistake to continue to search for a *general* definition of "seriously emotionally disturbance." Each of the above questions, which touch on problems such as incidence, eligibility for service, research generation, individual programming, and conceptual models, requires a different answer. We need to develop standards specifying desirable parameters of definitions for specific purposes such as these. Definitions need to be relevant to the purpose at hand. To assist us in thinking through this issue, we should undertake a review of present usage as reflected in professional journals, legislation, and individualized educational plans. Perhaps then, a working committee could formulate guidelines for us analogous to those

developed in other areas, for example APA's recommendations for standardized tests.

Values

Although various theorists have noted that the application of the label "disturbed" to the behavior of another implies a value judgment, we have not reached consensus on the practical implications of this observation. Rhodes and Paul's (1978) challenge to us to recognize the creative potential in deviant behavior and celebrate rather than suppress it reflects values almost diametrically opposed to those of teachers who wish to dismiss from their classrooms any students whose behaviors they consider to be disturbing or disruptive. Value-laden issues are also involved when cultural minority groups demand to know why disproportionate members of their young people have been labeled by the schools as "disturbed." Rich (1977) has pointed out that there may be a sex bias favoring females where teacher evaluation of school behavior is involved; females are labeled "disturbed" less frequently than boys. How do we deal with the problems resulting from conflicts in values?

To suggest there is a simple answer would be foolish. A sustained program of discussion and negotiation among parents, teachers, and older students is required. But the outcome can be positive. Parents and teachers, even when major cultural differences are involved, do not differ greatly in their basic values. The great majority of parents are deeply concerned that their children learn, and are as concerned as teachers about disorder in schools. In most cases, they are ready to support use of very strong control procedures, not excluding use of corporal punishment, if told by teachers and administrators that this is necessary for establishing an orderly school environment in which learning can take place. A recent report (MARC, 1976) documents a regretable case of this sort in New York City junior high schools. The solution of value-related problems is found by involving parents more in the making of policies that guide teachers and administrators in the management of problem behaviors in schools, then continuing their involvement as members of review boards to review the implementation of policies.

The issue raised by Rhodes and Paul is a much more difficult one—how do we deal with the recurrent social phenomenon of the creation of "scapegoats" from among those who behave differently, leading to the stripping from them of their rights to humane treatment. The best approach we have developed to date is to regulate the authority of those with power to hurt by establishing appropriate laws and guidelines for professional practice. Perhaps we can do better.

POLICY ISSUES

Competition for Resources

Recent court decisions have underlined the right of all children to a free public education appropriate to their needs. These court decisions have received congressional endorsement through enactment of P.L. 94-142.
2 All over this country, schools are being required to serve severely disturbed

and behavior disordered children and youth who were previously excluded as ineducable or intolerably disruptive of the education of others. Other students whose behavior is difficult to manage are returning to the community as residential institutions respond to court decisions requiring their deinstitutionalization. Some students with histories of disturbed or delinquent behavior are remaining in the community because of public and court disillusionment with the therapeutic or correctional potential of the existing institutional programs. As a result, public school special educators are being asked to plan programs for young people with whom even institutions have found it difficult to work.

Emotionally disturbed children have two major needs: First, there is a need for the removal of pathological physiological or environmental conditions contributing to their maladjustment or disturbance and a need for assistance in unlearning behavior that is destructive to self or society. Second, there is a need for assistance in developing their potential for social competence through the learning of social skills, including those related to academic achievement in schools. It is the second area that is the primary focus and area of expertise of special education, but a moment's reflection reveals how futile the best educational program will be without a complimentary program focused on the first need by those who specialize in the removal of pathology such as medical doctors, social workers, psychologists, psychiatrists, and others.

Often when school boards are faced with the necessity for cutting back on programs, they first think of cutbacks in the areas that are not clearly direct educational services such as school health, social work, psychology, and counseling. Cuts in these areas have a major impact on special education programs for severely emotionally disturbed students. For while such supportive service programs have seldom been staffed to the level where they can assume responsibility for direct service dealing with pathological conditions affecting special students, they have provided an important link to the services available through community agencies. Curtailment of these supportive personnel services immediately limits the effectiveness of any special education program.

Competition for Resources Within Special Education

Even as special education as a whole is seeking to maintain or increase the overall amount of resources available for the education of the children with special needs, scuffles over existing resources are taking place within special education itself. Those of us concerned about the needs of children with behavior disorders need to think clearly less we be drawn into arguments and quarrels that will weaken our efforts on behalf of children. It is tragic, for instance, to see groups independently lobbying for the needs of severely emotionally disturbed children with autistic characteristics over against the needs of moderately disturbed children. And what reasons can be given for the exclusion of children labelled "socially maladjusted" from the provisions of P.L. 94-142? As concerned professionals, we must speak out if any child is prevented from receiving an appropriate special education because he or she has the "wrong" label, especially given our awareness of the questionable validity of our labeling procedures. All these

children have desperate needs. To cooperate in plans to take from one group to serve another is short-sighted.

Yet, there is no question that we are tending to slip into groups contending for the same small number of dollars rather than recognizing our common interest in increasing the size of the total special education allocation. At a school budget planning meeting, one may hear an advocate for children with autistic characteristics speak of their needs as "greater" than those of other disturbed children. This produces a response from an advocate for the needs of moderately emotionally disturbed children about the poor cost/benefit ratio to be expected from serving children who "really should be institutionalized." Those of us with a broad concern that adequate services be provided for *all* children with handicapped conditions should be alert to the need to manage such internal competition for special education funds.

As a Minnesota legislator told a group of us recently, "groups such as yours can help your cause greatly if you have some degree of agreement among yourselves when you come to us at the legislature. If you come with a variety of points of view, legislators, who usually feel much less well-acquainted with the field than you are, have a hard time knowing where to come down with help. In consequence, you are less effective. I can always postpone action by saying quite sincerely, come back to see me when you have decided what you want."

SERVICE DELIVERY ISSUES

The Need for Educational Alternatives

The assumption that the presence of the "normal" peer group facilitates the learning of socially approved behavior by special students is the major reason for the placement of such students in regular "mainstream" classrooms. Systematic observation indicates that the behavior of children labeled "emotionally disturbed," just like the behavior of the rest of us, does indeed vary with the characteristics of the setting. Furthermore, the response of a given student to each situation is itself "individual." Pupil A does not respond as does Pupil B.

Adequate attention to this variation complicates our special programming. In addition to the continuums of special services frequently suggested (see Reynolds and Birch, 1977), we need an additional horizontal continuum of "alternative" regular and special settings. It has been argued earlier that the major goal in special education for the seriously emotionally disturbed is a development of competence in the social and academic skills required in schools. For some students, the necessary learning will come more easily in highly structured settings, while for others, relatively open settings will be more facilitative.

In Minneapolis, Minnesota, a range of educational alternatives, ranging from highly structured "fundamental" schools to very unstructured "free" schools, has been developed. The existence of this range of options has permitted both students and parents to seek the environments with which they feel most comfortable and learn most satisfactorily. In the case of

special students, considerable counseling about the implications of alternatives may be necessary, but the development of the alternatives in the regular education program has important implications for the success of the mainstreaming effort and should be supported by special educators.

Changes in the Role of State Education Agencies

As a result of P.L. 94-142, dramatic changes are occurring in the role of state education agencies. Because of the tradition that leaves many educational policy decisions with local school boards, the role of state education agencies has often been limited to providing information about state regulations and guidelines and monitoring local programs for general compliance. As federal funding for public education has increased, the monitoring responsibility of the state education agency has also increased. Now, with a substantial increase in discretionary money as a result of the new law, state education agencies can move into an important leadership position in special education. Just how the new responsibilities will be discharged is not yet clear, and there will certainly be considerable variation from state to state.

Special educators concerned about the education of seriously emotionally disturbed and behavior disordered students need to be certain that there is strong advocacy for such students at the state level. Since in most states, parents of emotionally disturbed children have not formed strong organizations such as those formed by parents of children with other kinds of disabilities, greater responsibility for advocacy falls on the shoulders of teachers, other school personnel, and college faculties.

Joint Planning by Parents, Students, Teachers

Over the years, most educational plans for students with special needs because of emotional disturbance or problem behavior have been developed and implemented by special educators working alone, or occasionally, with an interdisciplinary team of psychologists, social workers, and perhaps, psychiatrists or other medical specialists. The role of parents in planning has been passive, limited to approving the plan developed by the "experts." Often parents have been patronized as unable to contribute much except diagnostic information because of their presumed "heavy involvment" in the causation of their child's problem. Students, themselves, have been even more completely disfranchised as far as participation in the making of the major decisions was concerned.

The individualized educational plans (IEPs) now required by P.L. 94-142 force school personnel to provide for greater involvment by parents in planning educational programs for the children (Harvey, 1978). While involvment of students is not always required, our experience with programs stressing self-control strategies has demonstrated the value of student involvment in developing student commitment to proposed intervention plans. Both parents and students provide important assistance in the implementation of treatment programs to which they are committed.

Special educators are still learning effective ways of involving students and parents, but early results are encouraging. In the long run, the require-

ment of parent participation in planning will prove to be one of the most beneficial aspects of P.L. 94-142.

INTERVENTION ISSUES

Therapeutic Value of Education

The importance of education in the broad sense of assisting individuals to grow, to develop their potential, as a part of therapeutic programs for persons with behavior problems has not always been recognized. As recently as the late 1950's, teachers were still "junior assistants" in therapeutic programs for emotionally disturbed children and youth. It was not unknown for those who had the right to use the potent term, "psychotherapist"—a select group of psychiatrists, psychologists, and social workers from which educators were pointedly excluded—to categorize teachers and schools along with parents and homes, as among the primary *causes* of the emotional disturbance in children. I recall being told by psychiatrist that it was unimportant whether or not a child patient of his assigned to my special class "learned" while in the class, because no "real" learning would take place until the child's problem had been resolved through therapy. Such a point of view, at once both presumptious and naive, was not held by all psychotherapists, and is hopefully now almost extinct. Therapists now recognize that special educational programs that strengthen the capacity of individual disturbed children for acting and coping with their environments are as important to therapy as the removal of pathological conditions through psychiatric or physiological interventions.

In the 1960's, just as educators were becoming accepted as members in good standing of the therapeutic team, another issue divided the field. The new struggle was between advocates of behavioral approaches and those favoring psychodynamic or psychoeducational approaches. Here again, there was a tendency for some to feel that they had to be identified with one viewpoint or the other while, in reality, most programs were based on a pragmatic combination of elements reflecting both theoretical positions. Only the most mechanistic behaviorist felt that it was useless to talk with students about feelings and goals, and only the most doctrinaire psychoanalytically-oriented educators insisted that present environmental contingencies were unimportant in the determination of present behavior. William Morse, in an interview published in *Exceptional Children* (1977), notes the importance of combinations of interventions drawn from these two major theoretical perspectives that can be observed in a number of exemplary programs. Most of us would agree with him that combined approaches recognize that human behavior is more marvellous and complex than any theoretical model and provide for flexible adaptation of the intervention to match the characteristics of the individual students. Hopefully, as we get more sophisticated in our understanding of the needs of individuals, our "bag of tools" will become larger so that we are better able to adapt to the requirments of a particular problem.

The developments mentioned have underlined the therapeutic potential of education. Teachers no longer have to feel like second-class members

of the therapeutic team. They have an important contribution to make as part of the total healing and growing process.

Knowing the Limits of Education

Having spoken so positively about the therapeutic value of education, we must now stress the limits of our programs. As already mentioned in the discussion of policy issues facing special education, many institutions that provide services to students with emotional and behavioral problems are not bound by the constitutional obligation to provide services that affects the public schools nor are their clients compelled to attend, as are our students. Examples would be correctional institutions and psychiatric treatment centers. In recent years, both of these types of institution have returned to the community students for whom they do not feel able to program. Once in the community, the education of these students becomes the responsibility of the public schools. At present, funding resources provided the schools through local, state, and federal appropriations are inadequate to provide the total treatment program these students need. The problem is what to do when other agencies either cannot or will not work in cooperation with us.

Our first responsibility is to demonstrate effectively the therapeutic potential of educational programs. But we must also speak out about what the schools *cannot do* as well as other agencies, and assist others in the mental health field to obtain the resources needed to maintain therapeutic programs that compliment those of special education. In the competition for dollars, we often promise much more than we can deliver. On the other hand, if our educational programs have not been successful, we have been too ready to place the blame on factors outside of our control such as the family and community. In the long run, failing to deal honestly and openly with the public has affected our credibility.

Therapeutic special educators need support from other programs and professions in helping students with special needs succeed. But even when we provide the best special programming, and students have the support of all of the services that they need, including cooperative, concerned parents, there will still be some students who make very slow progress in learning to cope with society. Rhodes and Paul (1978) have suggested that a pessimistic explanation for the existence of this group of failures is that our "mental health institutions," including the schools, basically serve the deep neurotic need of our society to see deviant persons punished, rather than the therapeutic purposes for which they have been supposedly established. The incidence of "failures," they suggest, is the result of our failure to deal with this basic problem within ourselves. Even those who do not share this view, will recognize that there is a significant group of seriously emotionally disturbed students whom we are unable to help because of the severity of their problems or our lack of knowledge and skill. It is terribly important that we recognize and accept the fact of these limitations of our therapeutic programs, because the failure to recognize it may cause us to rationalize the punishment of students in ways that violate their fundamental human rights (Wood and Lakin, 1978).

Long Range Planning for Emotionally Disturbed and Behavior Disordered Youth

Many early special education programs for students with behavior and emotional problems appeared to be based on the assumption that such behavior was a transient phenomenon which would be "outgrown" by early adolescence. More cynically, we have probably assumed that if they did not outgrow their problems by early adolescence they would drop out of school. Whatever the reasons, programs for secondary-level students often tended to be restrictive and punitive in character if they did exist.

It is time to examine our beliefs about the persistence of behavior problems. While it is true that the period of the problem behavior in the lives of most children tends to be transient, the problems of a small subgroup persist over time. After reviewing the literature, Wood and Zabel (1978) have noted that while 20 to 30 percent of the child population at any given grade level will be described by teachers and parents as having "problems," there is a very high turnover rate in this group. Only 0.5–1.5 percent of the child population is assigned to the "problem" group year after year. However, even this group is larger than many of the categorical groupings for which we are concerned enough to provide careful long-range planning such as the crippled, visually impaired, and hearing impaired. Is long range planning taking place for students with disturbed and problem behavior?

Not systematically. Often students whose primary disabilities are behavioral or emotional are referred to programs set up to provide occupational guidance, vocational education, and employment advocacy primarily to persons recognized as developmentally disabled because of intellectual, sensory, or physical handicaps. We have been slow to provide special attention to adolescent students whose chronic social/emotional adjustment problems show that they will need prolonged supportive service to maintain a satisfactory adjustment in our society.

Research Issues

Space limitations prevent an adequate discussion of the contributions of research to our work with emotionally disturbed and behavior disordered students and the research needs of the present. This brief review is given from the perspective of the special educator as a consumer of research rather than a researcher.

Most *reports* of research on the effectiveness of educational interventions with severely emotionally disturbed students are useful primarily to stimulate us to think of procedures to try in our own situations. Whether basic or clinical research, these reports do not meet enough of the criteria for internal and external validity to support confident generalization of their findings. They are particularly deficient in their descriptions of the target population and the treatment applied. These deficiencies underline the fact that our field is still primarily a *craft*, combining the characteristics of an art and a science, rather than a pure science.

The importance of the "match" between intervention and students has already been mentioned. If "match" is important, then the clinical need for

detailed information about treatment and subject characteristics is apparent. This detail is almost completely lacking in most studies where group means are compared. Knowing from experience as well as theory that populations become more variable at the extremes, we find descriptions such "a randomly selected group of seriously emotionally disturbed students" meaningless. Comparison of group means can be informative only if the other requirements of group designs are met, and we should agree with Morse (1977) that at present we will often learn more from detailed N = 1 studies than poor quality group research.

Perhaps for the time being, we might do more systematic time series studies of single individuals who are receiving as much as possible the same treatment, describing them as adequately as we are able, and summarizing group means only as a secondary aspect of our report. Such research would help us look at detailed information about changes in the behavior of many single individuals. In the long run, it is simultaneous attention to both group mean characteristics and detailed description of the individual uniqueness that produces them that will move us ahead most rapidly.

As a footnote to these comments, we might note that the needs of students with special needs would be far better served if we rewarded researchers as well as for honest descriptions of ineffective programs as for shoddy descriptions of self-proclaimed successful programs. The literature of our field overreports success. For a recent note from a researcher outside our field whose opinions seem generally supportive of those just stated (see Slavin, 1978).

TRAINING ISSUES

Assisting Regular Teachers and Administrators to Meet Needs of Severely Emotionally Disturbed Students

Special educators sometimes talk about "*sensitizing* regular teachers and administrators to meet the needs of severely emotionally disturbed students," lapsing into an attitude that weakens the effectiveness of our advocacy of mainstreaming. Regular teachers and administrators do not need to be "sensitized" to the needs of seriously emotionally disturbed students. The problem is assisting them to cope with the always frustrating and frequently disruptive behavior of such students, and that is a *shared* problem for us all. Changing customary and well-reinforced patterns of behavior in order to meet the needs of these students more appropriately in regular classrooms will always be difficult. It is especially difficult since the mainstreaming effort is occurring at a time when demands on teachers are being increased and supportive services in the schools are being cut back. More preaching will produce more teacher defensiveness, expressed in the efforts of teacher organizations to limit the responsibilities of regular teachers for children with special needs. What is needed is more direct assistance.

Inservice training sessions are not adequate to meet the need unless they are supplemented with on-the-line support. Direct support in training for teachers working in regular classrooms with emotionally disturbed students is not a new idea. Fifteen or more years ago, Dr. William Morse and

others at the University of Michigan were developing the "crisis teacher" model (1976) and Redl, Long, and Newman were supplying "technical assistance in schools" (Long and Newman, 1961; Newman, Redl, and Kitchener, 1962). This good idea, however, has never been applied broadly because few school systems have been willing to commit funds for such programs in the face of the built-in preference for "getting rid of bad kids."

What about inservice training, the other approach to meeting the needs of regular class teachers and administrators? For maximum effectiveness, such training should be planned with substantial, responsive participation from the teachers who will receive the training and provision for on-site following-up activities that assist teachers to apply in their classrooms the concepts discussed in training sessions. Models for field-based training, including inservice elements, were recently discussed at a BEH funded conference held in Lexington, Kentucky under the direction of Dr. C. Michael Nelson (1978). Dr. Albert H. Fink has studied the effectiveness of various patterns for providing inservice training. A short summary of his ideas was published in *Behavior Disorders* (Fink and Brownsmith, 1977). In it, he lists general principles for successful inservice training of teachers.

Another valuable source of guidelines for special educators planning inservice training programs is a bulletin prepared by James Siantz and Edward Moore of the BEH-DPP staff in the Fall of 1977. While prepared to guide persons preparing proposals for funded inservice training, their bulletin provides a convenient check list of important aspects of inservice training.

Preservice and Inservice Training Needs of Special Teachers of Seriously Emotionally Disturbed Students

"Teacher burnout" is a long-standing problem in our field. All of us know excellent teachers of seriously emotionally disturbed students who decided after five to ten years that they needed a change from the demanding day-to-day work in which they were involved. Some went into regular education, others into administration or graduate programs leading to other roles. Few returned to the special classroom. If we are realistic about the stress that working directly with seriously disturbed persons places on mental health, we will accept such voluntary retirements as understandable and appropriate. Thus, the issue related to the "burnout problem" is not "how do we keep teachers in our special classrooms for seriously emotionally disturbed students when they want to leave?," but "how do we provide an environment that helps special teachers deal with the stresses of their work for as long as possible?" Part of the answer lies in providing both recognition and reward, and support in optimal amounts. Good special administrators are doing this intuitively, but I'm not aware that anyone has looked at the matter systematically. Someone should.

Because of "teacher burnout" and other factors that produce attrition, the need to continue preservice training of teachers to work with seriously emotionally disturbed students continues in all areas. Dr. Gweneth Blacklock Brown and Douglas Palmer (1977) have published a survey of training

programs currently being funded by BEH-DPP that provides information about resources and needs. According to their findings, training programs come closest to meeting the needs for teachers of elementary aged students with problems in the mild and moderate range. Training capacity is severely limited for groups such as the teachers of autistic/psychotic/developmentally disabled and emotionally disturbed students, preschool children with mental problems, and all groups at the secondary level. Strong programs preparing teachers to work across categories such as mental retardation, learning disabilities and emotional disturbance, or in mainstreaming situations, are few in number. Federal funding priority has been shifted to encourage program development in these areas of greatest deficiency, but it will be some time before the shift in priorities makes itself felt in the field.

We will face serious problems in building and rapidly disseminating the knowledge base needed to develop good training programs in these areas. It has taken us a long time to develop sophisticated programs in the areas that first attracted our attention and efforts. We are particularly short of knowledge at the secondary level, partly because the challenge presented by seriously emotionally disturbed students of this age is so great. Without going into much detail, I think the problems associated with program development can be satisfactorily met, but it will take time. Given a general shortage of resources in the field, I hope that program development in these new areas can take place without seriously weakening our efforts in areas where the need will continue although it is no longer relatively so critical.

Yet another training problem is being created by the application of the seniority criterion as the basis for cutting teachers in large school systems where enrollments are declining. Since special education programs serving emotionally disturbed students are relatively new in most systems, and because of the attrition or "burnout" problem that has been mentioned, many of our specially trained teachers have low seniority in their systems. As a result, some of these well-trained teachers are the first to be dismissed, and their pupils are reassigned to regular teachers on the basis of seniority. While in some ways this is a preservice training problem, in most cases it emerges as an inservice problem with the emphasis often appearing to be placed more on getting these new teachers "certified" than on getting them "professionally qualified" for their new positions. It is important that we do all we can to hold out for high quality training, seeking ways to develop a service delivery model that accommodates the special needs. In itself, experience in the regular classroom should be an asset for these new teachers. We need to do what we can to make sure that forced reassignment is not a permanent liability to themselves or to students.

SUMMARY

Dealing effectively with all of the issues raised in this paper would keep us all very busy in the next few years. Some problems can probably be solved through simple hard work, although the solutions inevitably turn out to be more complex than we anticipate. Others, like those reflecting fundamental

differences in values, the social labeling of certain kinds of behavior as deviant, or resetting the priorities for the allocation of our field's limited resources will never be fully resolved. On the whole, we can feel encouraged by the progress that special education for seriously emotionally disturbed students has made in the past twenty years. We must work to insure the continuing development of programs that are both more effective and more humane for assisting students who have been labeled "emotionally disturbed" or "behavior disordered" to develop their unique potential as social beings than those of the present.

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THE FIELD-BASED SPECIAL EDUCATION TEACHER TRAINING PROGRAM: PRESERVICE TRAINING OF TEACHERS OF BEHAVIORALLY DISORDERED CHILDREN

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INTRODUCTION

The Field-Based Special Education Teaching Training Program at George Peabody College for Teachers is a competency-based graduate program whose 12 semester hours count primarily towards fulfillment of the master of science degree in special education. A major aim of this program, as well as other competency-based programs, is to train teachers to have specific skills in teaching which lead to better education for all handicapped children (McNeil and Popham, 1973; Shores, Burney, and Weigerink, 1976).

The development of teaching competencies through modular formats similar to those used in the Field-Based Program has been cited in the teacher training literature (Blackhurst, Cross, Nelson, and Tawney, 1973; Bullock and Whelan, 1971; Cegelka and Tawney, 1975; Nelson, 1974). However, this program is one of few which have attempted to evaluate the effects of trainee's teaching on the subsequent performance of handicapped pupils (Kerr, Shores, and Stowitschek, in press; Shores, Cegelka, and Nelson, 1973; Shores, Stowitschek, and Kerr, 1978). Thus, this program confirms the statement by Semmell and Semmell (1977) that the primary method of determining the effects of competency-based teacher education is through the trainees' functioning in field work.

Peabody's Field-Based Program is currently in its fourth year of operation, supported by a Program Assistance Grant from the Division of Personnel Preparation, Bureau of Education for the Handicapped. The current program represents a reorganization of the previous program, termed In-Step (Interrelated Special Training of Educational Personnel). In-Step graduates, when asked to evaluate their training program, made the suggestion that the course work and field work be more closely integrated, thus forming the basis for a decision to develop a Field-Based Teacher Training Program. Two core procedures courses, "Procedures in Special Education" (which focused on instructional technology competencies) and "Ap-

plied Behavior Analysis in the Classroom," were designed to be taught with the third course, "Field Work in Special Education." Together these form a 12-hour block of competencies which are now required of all master's students in the Special Education Program.

Approximately 20 students a year enroll in these courses and subsequently teach exceptional pupils in field work settings. The following is a more detailed description of the training provided to these trainees during the past two years of full operation and the effects of their teaching on the performance of the pupils they served.

TRAINEES

Nine men and 26 women participated in the Field-Based Program during the past two years. (Prior to this, six trainees participated in a limited pilot version of the current training model.) Ages of the participants ranged from 22 to 37 years. Seventeen of the trainees entered the program with previous experience in special education, ranging from one to eight years. All trainees were graduates of four-year undergraduate programs in special education or a related field.

In order to evaluate the effects of trainees' teaching on the performance of handicapped pupils, it was necessary to obtain the cooperation of local special education facilities serving exceptional children and youth. These facilities were selected on the basis that their staffs could provide the field-based trainees with opportunities to master the core competencies of the program. In order to provide a wide variety of opportunities, field sites were established in public school self-contained classrooms, in resource rooms, in residential institutions, in group homes, and in private and parochial classrooms. Pupils ranged in age from two to 18 years, with the majority of pupils at the preschool and primary school levels ($n = 200$). Table 1 summarizes the participants in the Field Based Program, by handicapping conditions of those pupils served. It can be noted that pupils from differing handicapping conditions were served by the trainees.

Each trainee remained in a field placement for at least one semester, allowing the trainee enough time to design and implement the programs required to demonstrate the core competencies. With the exception of those weeks in which attendance was required in the core procedures courses on campus, trainees spent three hours daily in their respective field placements.

Working with the trainees in these field sites each year was a staff of field work supervisors; the ratio of supervisors to trainees was approximately 1:4. This staff, under the supervision of a full-time coordinator, was composed of doctoral students currently enrolled in Peabody's special education program. Supervisors met with trainees twice per week in order to provide assistance on planning and implementing programs in the field site classrooms and to monitor the progress of the trainees and their pupils.

ORGANIZATION OF TRAINING PROCEDURES

As mentioned earlier, two procedures courses accompanied the work in field sites. The first of these two courses, S.E. 311, "Procedures in Special

TABLE 1
Summary of Participants in Field-Based Training Programs

	Teacher Trainees				Pupils Served				Cooperating Teachers			
	1976–77		1977–78		1976–77		1977–78		1976–77		1977–78	
Handicapping Condition	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**
Behavior Disorders	4	2	3	5	24	8	14	33	2	1	2	5
Deaf/Blind	0	2	0	0	0	6	0	0	0	2	0	0
Developmentally Delayed	6	12	3	4	35	62	36	34	4	7	3	3
Learning Disabilities	2	2	5	0	9	8	68	0	1	1	3	0
Multiply Handicapped	4	1	2	2	18	8	9	17	2	1	1	2
Severely Retarded	2	5	4	3	9	28	22	18	1	3	2	2
Total	18	24*	17	14	95	120	149	102	10	15	11	12

* Six additional students were provided supervision for the Spring Semester.

Education," focused on the use of instructional technology for handicapped pupils. The curriculum for this course was divided into four major areas: (1) skill development in task analysis, (2) criterion-referenced measurement, (3) concept analysis, and (4) instructional program development. These skills were developed in a three-step sequence as follows: First, trainees listened to a series of class lectures and completed outside readings. Second, trainees participated in class simulations to give them practice in the use of the competencies. Finally, trainees were required to use these competencies in their field placements and to submit the results of their teaching to the course instructor.

The second course, S.E. 321, "Applied Behavior Analysis in the Classroom," also followed the three-step procedure of lecture and readings, simulations, then actual practice. Field application of competencies within this course included: (A) pinpointing target behaviors, (B) collecting observational data to a predetermined level of interobserver agreement, (C) specifying appropriate reinforcers, (D) conducting direct instruction using three different formats, and (E) designing, implementing, and reporting the results of a sequential curriculum of classroom interventions for handicapped individuals.

These courses were offered in two segments. During the first three weeks of the semester, trainees attended an intensive presentation of the courses from 9 a.m. to 2 p.m. daily. Following this first segment, trainees were introduced to their field sites and began preliminary planning and initial assessments for their subsequent teaching programs. After two weeks in the field, the trainees returned to the campus for a second segment of the procedures courses, held between 11 a.m. and 2 p.m. each day. During this three-week period trainees were, therefore, involved in both coursework and field applications. At the conclusion of the second three-week offering, trainees returned to their field sites for the duration of the semester, remaining approximately three hours each morning.

As trainees initially attempted to master competencies in their field sites, they were required to present each teaching program to their respective field supervisors, who approved it as being an appropriate task for the pupil. Once this approval was obtained, the program was then submitted to the course instructors who used it to evaluate the trainee in the basic skills of initial assessment and planning. At the completion of the teaching program, each trainee was required to present the pupil data, accompanied by statements of reliability as measured by the trainee and another student or the cooperating teacher. The completed program was then submitted for final review by the course instructors as meeting the required competencies in direct intervention and progress monitoring. This final evaluation that a trainee had demonstrated mastery was supplemented by data from the supervisor, who was required to observe each program to verify that the trainee was in fact following the prescribed teaching strategies.

DATA COLLECTION PROCEDURES

In order to collect data on the wide variety of teaching programs developed by the trainees, standard data collection instruments were designed by the staff of the Field-Based Program. These consisted of: (A) a competency

checklist, (B) a time log, (C) a practicum plan sheet, and (D) direct observations by the supervisors. The Competency Checklist consisted of a listing of the core competencies of the program as they might be reflected through teaching programs. Competencies, for example, were listed according to these components of a program: (A) targeting behaviors, (B) initial assessment, (C) intervention (which included materials, antecedent events, consequation, and contingency schedule), and (D) progress monitoring. As a trainee completed mastery of the competencies within a teaching program, the supervisor checked off the appropriate entry on the Competency Checklist.

A weekly time log constituted the second form of data collected in the Field-Based Program. This time log was completed by the trainees and indicated those direct and indirect instructional activities in which they were engaging in field sites. Time log data provided the course instructors with an estimate of how much practice the trainees were getting in mastering the core skills.

The third data collection form was the Practicum Plan Sheet. The first section of this form allowed the trainees to write a behavioral statement of the learner's task. On the second page of the form, the trainees used computer codes to describe their planning tactic, direct intervention strategies, system of progress monitoring, and to record daily data on pupil performance.

The fourth form of data was that collected by the field work supervisors who observed the trainees implementing their teaching plans. The following section presents the data gathered through these procedures.

RESULTS

During the past two years, only one trainee did not reach criterion on all didactic competencies. Of greatest significance to the Field-Based Program were the effects that the trainees' teaching had on the performance of handicapped learners. These data were provided through the Practicum Plan Sheet, which included details of the teaching program with major goals, objectives, and subobjectives listed. Most importantly, data were also provided on the pupil's performance.

One such form of data was the pupil mastery of the terminal objectives. A terminal objective is one in which the pupil has reached all subobjectives and is considered ready to move on to another teaching program. A terminal objective, for example, might read: "The child will correctly write the months of the year in order, spelling each one correctly." A subobjective of this terminal might be: "The child will correctly write the month, July, spelling it correctly."

During the past two years, pupils mastered 48 percent of the terminal objectives designed for them by trainees. Table 2 summarizes the results of the teaching programs by pupils' handicapping conditions.

Tables 3–6 present a breakdown of the terminal objectives into the subobjectives attempted; these are grouped according to specific competency areas. Table 3 presents the data on the assessment and planning com-

TABLE 2
Mastery and Non-Mastery of Terminal Objectives

Pupils' handicapping conditions	Mastery	Non-Mastery
Multiply Handicapped	73	39
Learning Disabled	36	28
Behavior Disordered	43	46
Severely and Profoundly Retarded	14	61
Developmentally Delayed	73	86
Total	239	260
	48%	52%

petencies. It will be noted that task analysis was the most frequently used tactic for planning, while the most frequently used type of instructional material was teacher-made.

Table 4 presents the data on direct intervention strategies used by the trainees. The most frequently used presentation procedures were questioning and direction-giving. Data on child responses were recorded during 1977–78 only; during that year, however, pupils were most frequently called upon for oral responses. Consequation typically consisted of continuous schedules of social reinforcement.

Data in Table 5 reflect most frequent use of daily recording as a measurement system.

TABLE 3
Assessment and Planning Tactics Used in Teaching Subobjectives

	Used		Child Mastered		Child Not Mastered	
Tactic	Frequency	%	Frequency	%	Frequency	%
Analysis:						
Task Analysis	1,268	47.5	1,038	81.9	230	18.1
Criterion Referenced	462	17.3	334	72.3	128	27.7
Concept Analysis	394	14.7	348	88.3	46	11.7
Is-Does	184	6.9	133	72.3	51	27.7
Observation	168	6.3	128	76.2	40	23.8
Other	194	7.3	154	79.4	40	20.6
Total Reported	2,670		2,135	80.0	535	20.0
Materials:						
Teacher Made	1,393	52.1	1,194	85.7	199	14.3
Commercial	630	23.6	522	82.9	108	17.1
Adapted	407	15.2	274	67.3	133	32.7
Other	243	9.1	148	61.0	95	39.0
Total Reported	2,673		2,138		535	

TABLE 4
Direct Intervention Tactics Used in Teaching Subobjectives

Tactic Presentation Mode	Used		Child Mastered		Child Not Mastered	
	Frequency	%	Frequency	%	Frequency	%
Questioning	649	24.6	610	94.0	39	6.0
Direction Giving	605	23.0	455	75.2	150	24.8
Prompt	495	18.8	376	76.0	119	24.0
Model	458	17.4	325	71.0	133	29.0
Shape	281	10.7	245	87.2	36	12.8
Pair-Fade	30	0.1	24	80.0	6	20.0
Prime	16	0.6	15	93.8	1	6.2
Lecture	9	0.3	9	100.0	0	0.0
Other	91	3.5	60	66.0	31	34.0
Total Reported	2,634		2,119		515	
Child Response Expected						
Oral Response	550	29.1	514	93.5	36	6.5
Motor Response	505	27.0	350	69.3	155	30.7
Written Response	518	27.4	459	88.6	59	11.4
Verbal Imitation	76	4.0	52	68.4	24	31.6
Other	242	12.8	179	74.0	63	26.0
Total Reported	1,891		1,554		337	
Arrangement:						
Continuous	1,258	48.8	970	77.0	288	23.0
Variable Ratio	317	12.3	243	78.0	74	22.0
Variable Interval	462	17.9	420	91.0	42	9.1
Fixed Ratio	400	15.5	337	84.3	63	15.7
Fixed Interval	142	5.5	99	69.7	43	30.3
Total Reported	2,579		2,069		510	
Arranged Event:						
Social	1,785	67.3	1,479	82.9	306	17.1
Token	440	16.6	362	82.3	78	17.7
Consumable	280	10.6	173	61.7	107	38.2
Activity	79	3.0	71	89.9	8	10.1
Other	67	2.5	43	64.2	24	35.8
Total Reported	2,651		2,128		523	

The final table in this series, Table 6, presents the subobjectives taught by curricular area. Most of these subobjectives were taught in the areas of reading (*n = 583*), math (*n = 511*), and in language (*n = 504*). It can be noted, however, that the core competencies were demonstrated across a range of curricular areas.

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TABLE 5
Measurement Systems Used in Teaching Subobjectives

Tactic / Monitoring Tactic	Use		Child Mastery		Child Non-Mastery	
	Frequency	%	Frequency	%	Frequency	%
Daily Records	2,166	81.1	1,700	78.5	466	21.5
Criterion-Referenced	353	13.2	299	84.7	54	15.3
Norm-Referenced	27	1.0	26	96.3	1	3.7
Other	124	4.7	115	92.7	9	7.3
Total Reported	2,670		2,140		530	

Another form of data previously mentioned was that of the trainees' time logs. Self-reports from those students enrolled in the past two years of the Field-Based Program indicated that the average time spent in field work sites ranged from 106 to 181 hours per semester in 1976–77 and from 136 to 203 hours per semester in 1977–78.

DISCUSSION

In general, these data would suggest that the trainees were using the core competencies in all of the field placements. Thus, a satisfactory attempt was made to integrate field work with didactic offerings.

More importantly, perhaps, the data suggest that those pupils who were taught by the Field-Based Trainees benefited from their instruction. Approximately two-thirds of the subobjectives derived for these pupils

TABLE 6
Curricular Areas in Which Subobjectives Were Taught

Tactic / Curriculum Areas	Use		Child Mastery		Child Non-Mastery	
	Frequency	%	Frequency	%	Frequency	%
Reading	583	21.9	519	89.0	64	11.0
Math	511	19.1	454	88.8	57	11.2
Language	505	19.0	386	76.4	119	23.6
Motor	315	11.8	212	67.3	103	32.7
Self-Help	315	11.8	231	73.3	84	26.7
Writing	200	7.5	151	75.5	49	24.5
Social	99	3.7	67	67.7	32	32.3
Spelling	91	3.4	72	79.1	19	20.9
Science	41	1.5	35	85.4	6	14.6
Career Education	9	0.3	9	100.0	0	0.0
Total Reported	2,669		2,136		533	

were subsequently mastered by them. Thus training offered by the Field-Based Program not only had a positive impact on its trainees but on their handicapped pupils.

Graduates of the Field-Based Program have expressed their satisfaction with the training they received through an annual follow-up survey. When asked to rank their proficiency in, and need for, those core competencies of the Field-Based Program, the graduates assigned high scores to nearly all of the competencies listed.

SUMMARY

The competencies developed through the didactic courses are viewed as validated competencies which are applicable across a wide variety of handicapping conditions and in a number of service delivery systems. The data systems have provided feedback to the instructors for improvement of the courses as well as allowing frequent monitoring of field applications by trainees.

We hope that this commitment to evaluation will lead to more rapid application of research to aid in developing training programs which are responsive to the needs of the field. If improving the education of handicapped children and youth is the raison d'être of special education teacher training, a competency-based program such as this one may then provide a small step towards empirically based teacher education in the future.

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THE IN-SERVICE CONSULTANT: A ROLE FOR TEACHER TRAINERS WORKING WITH BEHAVIOR DISORDERS IN THE SCHOOLS

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INTRODUCTION

The field of special education is currently going through a period of rapid transition. With the advent of PL 94-142, considerable stress is being placed on maintaining children with special needs in the mainstream of education whenever possible. For successful mainstreaming to replace letting behaviorally disordered (BD) children sit idle in the regular classroom, it is essential that both regular and special educators learn new roles, and develop the competencies to fulfill the requirements of these roles. These new roles potentially provide both exciting and demanding opportunities for self-development for both sets of professionals.

The training-based service delivery model described here rests on three assertions related to the successful implementation of a policy supporting the mainstreaming of BD children:

1. Special education can be viewed as a service delivery system (Stedman and Smith, 1977). This system must provide a variety of alternative services, including support services for mainstream educators. Educators in the field will need inservice training to prepare them for adequate functioning in their new roles (*i.e.*, as deliverers of support services or as teachers of classes into which BD children have been mainstreamed).

2. Special education support should be available for all children and teachers, not just those children who have been labeled. Special educators continually have struggled with defining and differentiating several of their subpopulations, especially in the areas of learning disabilities, emotional disturbance, and educable mental retardation (*c.f.*, Hallahan and Kauffmann, 1976). An increasing number of special educators (*e.g.*, Forness, 1976; Hallahan and Kauffmann, 1976; Lilly, 1970; Reynolds and Birch, 1977) have recommended that categorical differentiation not be employed at all. Classification appears to add little to the determination of treatment methods, and may contribute to a dangerous self-fulfilling prophesy. Children in regular classrooms may best be served on the basis of needs expressed by their teachers, other concerned professionals, or parents.

3. A training-based consultation model (*i.e.*, Christie, McKenzie, and Burdett, 1972; Lilly, 1971) is the optimal way of providing inservice training to mainstream educators. Training has traditionally been provided to teachers through two or three principal models. One mode consists of formal coursework. While formal courses can provide regular educators with a knowledge base for understanding and working with special children, such courses are limited in what they can provide in terms of application. Formal coursework alone may result in teachers who can use more of the right jargon, but still can't perform; this follows logically from training focused primarily on cognitive objectives. Formal courses also are not easily accessible to all teachers, and often contain content which is irrelevant to their daily instructional problems (Joyce, Howey, and Yarger, 1976). Saturday or after-school workshops are another alternative. This mode of training frequently suffers from lack of followup or demonstrated change in teacher (or child) behavior (Stein, 1975). One-shot consultation as a training mode can be similarily criticized.

   As an alternative to these traditional modes of instruction, we are suggesting that in-service training be school-based, job-embedded (*i.e.*, occur in the context of the teacher's work load), and continued over time. A consultant based at one or two schools would be ideal. Such consultants should reduce the number of students needing more extensive special education services, so that consultants would replace part of the existing special staff rather than greatly increase the total number of staff.

Using special educators as training consultants to regular classroom teachers is not a new idea. Lilly has been suggesting just such a role change for years (*c.f.*, Lilly, 1970, 1971), and has developed a model for its implementation. Miller and Sabatino (1978) have evaluated the teacher consultation model in Illinois. The University of Vermont Consulting Teacher Program represents an established program aimed at providing special educators with the skills for assuming an inservice consultation role (Christie, *et al.*, 1972; McKenzie, Egner, Knight, Perelman, Schneider, and Garvin, 1970). The effectiveness of this model has been demonstrated in school districts throughout Vermont.

A prerequisite to training special educators as in-service consultants is to delineate the activities performed by professionals engaged in such roles. The purpose of the study reported here was to explicate the process of in-service consultation. We have spent the last year and a half in a public school setting, delivering in-service consultation services to the school's staff. The descriptive account provided here may be helpful to anyone interested in developing or functioning in the role of an in-service teacher consultant.

PROCEDURES

Case Involvement

Our referral system is informal; teachers, the counselor, and the principal approach the consultants with their concerns on our designated days in

the school (we are currently scheduled two days a week). This referral is followed, that day, by an initial consultation interview with the teacher to determine the specifics of the problem, what may precipitate it, and what attempts the teacher has made to deal with the problem. A consultant observes the child or problem situation, to attach a face to the information received, and to form hypotheses about potential changes that could remedy the situation.

The consultant then meets again with the teacher to develop an intervention plan. This plan is primarily formed through a verbal exchange between teacher and consultant, but the consultant follows these verbal problem-solving sessions with a written record of the planning decisions (see Figure 1 for an example of a completed program plan). The program plan bears a close resemblance to the Individual Implementa-

FIGURE 1
Program Plan

Student Class — Program Writer K.R.

Teacher K.R. — Date Started 9/26/78

Grade 3 — First Evaluation 10/2/78

Second Evaluation 10/16/78

Program Changes (Dates) _____

_____

Statement of Problem: Math papers not completed

Terminal Objective: 90 percent of the group's math papers will be completed each day with at least 80 percent accuracy.

Intervention Plan: K.R. will implement a token system using play money. Desired behaviors will have different values (*e.g.*, paying attention or being on-task when the times rings = 1 cent. Finishing assignment = 10 cents. Finishing with at least 80 percent accuracy = 25 cents). At the end of math period, students count their money and turn into the banker (a sixth grader). Then they enter their total on the group chart. The boy and girl with the highest earnings are students of the day. Earnings may be saved to buy class privileges (going to restrooms, playing math games, etc.) K.R. will arrange prices, etc., and consult with Mike, Bob, or Kay regarding any changes or problems.

Evaluation Plan: Records of daily earnings and of work completed will be reviewed weekly.

Program Changes:

 cc: Teacher

tion Plan (IIP) portion of an Individual Educational Plan (IEP) as required by law, with perhaps one noticeable addition; a program change section. No plan is etched in stone, but is amenable to change based on the increased information gained throughout program implementation. Following our initial contact, we set up a folder for the student (or class). A copy of the program plan is placed in the folder, and a running account is maintained of the types of services provided and the time spent per service as well as notes regarding actions taken, for each case (see Figure 2).

Consultants closely monitor the implementation of program plans. This vigilance is almost certain to involve continued observation, consultation, and evaluation, and may also include program revision and change, parent conferencing, and direct interventions, such as demonstration of a change technique, testing or counseling of a child, or acting as a social reinforcer for a child. All activities are logged in the case file at the end of the day.

The teacher assumes a heavy portion of the responsibility for implementation of the plan, as is indicated in Figure 1. Teachers generally collect some basic data such as number of assessments completed or percent of accuracy, or the child is trained to record his or her own data on a simple recording form (*e.g.*, the child may check off assignments completed on a daily check sheet). Consultant and teacher will evaluate data at least once a week, as the basis for subsequent program changes or to reinforce the teacher's efforts. Changes, with their date, are indicated in the written plan.

Record Keeping

Record keeping of case-related information is an essential component of a consultant's job, if thoughtful and coherent service is to be provided. In our program, record keeping has been further expanded by the goal of critical examination of a consultant's use of time. Our records consist of a daily log, case contact summaries, and the written intervention plans previously mentioned.

A code was developed within the first two months of operation to simplify our data recording and to make later compilation of data a less formidable task. The original code was based on an analysis of our initial use of time, with some extrapolation to potential future uses of our time. We checked the reliability of the coding system by having two persons independently code entries read to them from our logs by a third person. Three days of consultation activities were randomly selected from the logs, and different pairs coded each of the days. Percent agreement between the two coders was calculated separately for each day. The agreements were 75 percent, 91 percent, and 93 percent. The coding system has undergone further revisions, as a result of the reliability studies and its face validity for representing consultation activities. The system covers eight general categories of consultant activities: consultation, observation, meetings, preparation and planning, administration, supplementary services, direct services in the regular classroom and direct services in an alternate setting. Each category is lettered (*e.g.*, M = meetings),

FIGURE 2
Student Contact Summary

Student: K.A. Problem Statement: Poor word attack skills; writing; inappropriate touching

Teacher: S.A.

Grade: 4

Date	Services	Time	Notes, Action Taken	Initials
4/10/78	C_2	10	Decided to count teaching all day instead of for one-half hour. Will take at least three days of baseline before setting contingency	
4/10	R_7	5	Set up tutoring procedures with J. and K. Will keep a session tally of words missed	
4/10	P_7	5	Recorded program revision on original revised plan sheet	
4/17	C_2	5	Data in room. J. showed up today	
4/17	C_2	5	Got data	
4/17	P_6	2	Graphing data	
4/20	R_1	25	I checked progress. Tutor no show—may be replaced (check next week)	
4/20	C_2	20	Still taking baseline on teaching behav. Ms. A. will work out program w/ M. on Mon.	
4/24/78	R_7	5	Checked on program. Missed only three words	
4/24	C_2	15	Set up timeout program on inappropriate teaching	
4/24	P_8	10	Wrote program for teaching (see plan)	
4/27	R_7	2	Tutor no show—replace	
4/27	C_2	20	Add to timeout—data not showing an improvement though Ms. A. thinks it is	

FIGURE 2
Continued

Date	Services	Time	Notes, Action Taken	Initials
4/27	C_2	10	Going well because K seems more aware—note to Ms. A on a new tutor	
4/27	P_7	15	Addition to program plan—add a reinforcer for better days w/ teaching	
4/27	P_6	5	Graphing K's data	

with subcategories receiving a number (*e.g.*, M4 = parent conferences). Each subcategory is further defined operationally. Once codes were mastered, we found our recording task simplified.

Codes are used on both a daily log (a straightforward account of each day's activities, in order, and with an indication of time spent on each) and on the Student Contact Summary (see Figure 2). It is our belief that a case summary form of this type is applicable to the needs of an inservice consultant, regardless of interest in analysis of time.

RESULTS

Table 1 provides an overall breakdown of how we spent our time during our first year as in-service consultants. One of the clearest results is the

TABLE 1
Allocation of Consultation Services

	Time (Minutes)			
	Fall Semester	Spring Semester	Total	Percent
Direct Services				
In Regular Classroom	210	507	717	5.0%
In Alternate Setting	107	85	192	1.3%
	317	592	909	6.3%
Indirect Services				
Consultation	2,033	2,442	4,475	31.4%
Observation	1,015	881	1,896	13.3%
Meetings	1,072	1,648	2,720	19.1%
Preparation and Planning	633	1,211	1,844	12.9%
Administration	655	1,745	2,400	16.8%
Supplementary Services	17	15	32	0.2%
	5,425	7,942	13,367	93.7%
Total	14,276	237.9 hours		100%

preponderance of indirect over direct services; nearly 94 percent of our time was spent rendering indirect service. Of these indirect services, consultation was by far the most frequent, followed by meetings and administrative activities. Administration *should not* ordinarily take such a large portion of a consultant's time; the extensive data collection and compilation activities resulting from our research interests contributed to this relatively high percentage. Observations and preparation and planning also took sizable portions of each consultant's time.

The 240-hour total reflects the service of two consultants in the fall and three consultants in the spring semester. Each consultant generally spent a day a week at the school.

Table 2 presents a more specific breakdown of each service category. Of the types of *consultation* we provided, consultation during intervention was most frequent, accounting for 75 percent of consultation time. In the *observation* category, 71 percent of our time was involved in informal observation. *Meetings* among our staff or with the principal were most common in the third category; we feel that frequent communication of these two types is essential for cooperative and successful job functioning.

Our *preparation and planning* time heavily involved writing (and revising) program plans, and analyzing and evaluating the resulting data. We had a "catchall" category under *administrative assistance*, called Center Administration, which garnered a great majority of our time there; we have since broken out this category further to give more specific information, especially that differentiating typical administrative activities of a consultant from those specific to our particular project.

Supplementary services last year were of low frequency and consisted of providing materials to individual teachers. This year, this category will reflect a change in emphasis towards workshop presentations. Since our children didn't require a label to be provided services, we didn't get involved in writing IEPs, which is reflected in the data presented here.

Direct services, which also were infrequent, consisted primarily of assistance with program implementation (*e.g.*, modeling a technique or acting as a backup social reinforcer to compliment a child who was doing well), and some informal testing in an alternate (*i.e.*, special) setting.

Table 3 contains an analysis of the 25 cases we served during our first year of operation. It can be seen that the number of contacts (services) provided for each case frequently is relatively large, though the duration of each contact generally is quite brief. A five-minute conversation with a teacher, or a brief check of a child's data were not uncommon, especially when a program was preceding well.

The types of problems characterizing the 25 cases are relatively varied and probably typical of many regular class settings. Work not completed was the most common referral complaint. Some of the cases taken on were classes rather than single children.

Since the ultimate criterion for success of this model is change in child behavior (as a function of change in teacher behavior), each case was evaluated as to degree of success in accomplishing this change.

Evaluations of success, partial success, and failure were based on three variables: (1) whether the child reached the terminal objective specified in his or her program plan; (2) analysis of data collected relevant to each case; and (3) teacher evaluation of program success, based on their responses to a questionnaire provided when services were terminated. Results indicated 15 successes (all three measures indicated success), eight partial successes (terminal objective not met but approximated, or met but not adequately maintained over time), and two failures.

DISCUSSION

As a component of our principal goal of studying and explicating the process of inservice consultation, we attempted to identify variables contributing to success for this model of service delivery. One of the ingredients we consider essential for success is a supportive principal. The principal generally sets the tone for the way others in the building will respond to a consultant, and can provide a model for referral of classroom behavior problems to the consultant. Closely related to this first variable is the "climate" of the school. The school climate in which we are operating is one characterized by open communication patterns. Teachers feel free to share materials, ideas, and potential problem solutions with one another, and perhaps even more important, to respond to another's idea, to experiment with novel solutions. Again, the principal sets the tone for this pattern, by getting around the building, problem-solving with teachers, and referring them to one another on particular issues. The design of the school further contributes to the open, cooperative climate, with its grade-level modules placing teachers in easy access to one another throughout the day.

Reliable and skilled consultation staff are a further requirement. We make ourselves highly visible and accessible to teachers on a regular basis. They need to know we'll be there each week, on the same days, and show up consistently to check what was happening with their programs. We need to be good listeners and good problem solvers, to demonstrate skilled use of applied behavior analysis, and the ability to facilitate others in its usage. We need more to help the teacher to be the expert than to be the experts ourselves. Once some teachers experienced success under our assistance, and knew we'd be there for them, business boomed.

Another essential element of the service we provide is its contingency on need rather than label. Teachers know that they can approach us with a concern and get almost immediate action and assistance. We can avoid the potential evils arising from giving a child a label, such as the self-fulfilling prophesy that often results in forgetting the child behind the label. An immediate problem orientation regardless of classification makes much more sense.

We also have found that a written plan is extremely helpful. It helps to keep us focused, and clarifies our verbal interaction, insuring that both teacher and consultant are interpreting a program in the same way. Procedural and evaluative functions of both teacher and consultant are clearly spelled out; we have a guide and a commitment through the written

TABLE 2
Garden Springs Project 1977–1978 School Year
Analysis of Consultation Services

	Time (Minutes)			
	Fall Semester	Spring Semester	Total	Percent of Category
Consultation				
Initial	495	225	720	16
During Intervention	1,338	2,008	3,346	75
Follow-up	0	179	179	4
Informal	200	20	220	5
Informal Counseling	0	10	10	0
			4,475	
Observation				
Informal	730	610	1,340	71
Baseline Data Collection	135	0	135	7
Ongoing Data	0	271	271	14
Reliability Check	150	0	150	8
			1,896	
Meetings				
With Principal	322	473	795	29
With Center Staff	555	920	1,475	54
With School Staff	35	35	70	3
Parent Conference	160	40	200	7
With Counselor	0	160	160	6
Other	0	20	20	1
			2,720	
Preparation and Planning				
Professional Reading	60	0	60	3
Library Research	0	0	0	0
Presentation Preparation	0	248	248	13
Materials Preparation	40	140	180	10
Center Development Planning	0	0	0	0
Writing Intervention Program	303	155	458	25
Data Analysis/ Evaluation	195	358	553	30
Program Revision	35	310	345	17
			1,844	
Administrative Assistance				
Center Administration	595	1,610	2,205	92
Developing Written Products	60	135	195	8
			2,400	

TABLE 2 (*Continued*)

	Time (Minutes)			
	Fall Semester	Spring Semester	Total	Percent of Category
Supplementary Services				
IEP Development	0	0	0	0
Workshop Presentation	0	0	0	0
Provision of Resource Materials	0	15	15	47
Provision of Instructional Materials	17	0	17	53
			32	
Direct Services				
In Regular Classroom				
Informal Testing	10	25	35	5
Tutoring	0	0	0	0
Demonstration Teaching	0	0	0	0
Demo Behavior Change Technique	30	5	35	5
Implement Behavior Change Program	0	55	55	8
Assist with Implementation	170	310	480	67
			717	
In Alternate Setting				
Formal Testing	45	0	45	23
Informal Testing	62	85	147	77
Tutoring	0	0	0	0
Teaching: Resource Room	0	0	0	0
Affective Education	0	0	0	0
			192	

plan. It seems to assist all of us to stay on task, to maintain a goal orientation, and to gather the data needed to evaluate change.

We've shown you how we've spent our time, and have shared with you the ingredients we consider essential for successful in-service consultation. A key question still might be "Have we trained teachers?" There are a number of ways to answer this question, with generalization and maintenance of change being a crucial component of each answer.

One way to approach this question is to examine the children we served last year, to see if the changes that occurred had maintained and generalized. Of our 25 cases last year, all but two are in the same school this year. Eight have come to our attention this year, and of these eight,

TABLE 3
Case Analysis

Case	Presenting Problem	Number of Services	Distribution of Consultation Time (Minutes and Percent)		Evaluation
1	4th grade male. Not working, poor reader, difficulty copying, inappropriate peer interaction	64	1,104	7.7%	Success
2	5th grade class. Inappropriate behaviors	8	167	1.2%	Success
3	2nd grade male. Not completing work or following directions	51	670	4.7%	Partial Success
4	3rd grade male. Not completing independent written work	34	670	4.7%	Success
5	3rd grade male. Work not complete	28	169	1.2%	Success
6	2nd grade male. Talking to self and objects	5	35	0.2%	Success
7	2nd grade male. Work not complete	70	827	5.8%	Partial Success
8	3rd grade male. Work not complete	33	380	2.7%	Failure
9	2nd grade male. Poor work habits, sloppy and inaccurate work, not following directions	35	482	3.4%	Success
10	2nd grade male. Off task, poor achievement	20	340	2.4%	Partial Success
11	4th grade male. Work not complete	8	75	0.5%	Success
12	3rd grade female. Work not complete, stealing	22	170	1.2%	Success
13	3rd grade male. Illegible handwriting	7	195	1.4%	Failure
14	3rd grade female. Work not complete	52	417	2.9%	Success

TABLE 3 (*Continued*)

Case	Presenting Problem	Number of Services	Distribution of Consultation Time (Minutes and Percent)		Evaluation
15	2nd grade class. Work not completed or inaccurately done	22	475	3.3%	Partial Success
16	6th grade female. Not participating in music	3	45	0.3%	Success
17	5th grade male. Crying, getting sick, avoiding gym	13	250	1.8%	Success
18	2nd grade male. Work not complete, off-task, not wearing glasses, inappropriate behavior	23	388	2.7%	Success
19	3rd grade male. Help in determining if ready for full-time regular placement	5	85	0.6%	Success
20	6th grade male. Poor interpersonal relations, making noises, not working	17	235	1.6%	Partial Success
21	3rd grade male. Work not complete, poor spelling	48	467	3.3%	Partial Success
22	4th grade class. Off-task, inattentiveness, work materials not ready	38	443	3.1%	Partial Success
23	3rd grade male. Work not complete	61	762	5.3%	Partial Success
24	Kindergarten male. Off-task, disruptive, doesn't follow directions	18	285	2.0%	Success
25	6th grade female. Inappropriate verbal behavior	3	20	0.1%	Success
		Total	9,156	64.1%	

six are making satisfactory progress without formal intervention (*i.e.*, we have developed no formal program plan). The remaining two have required intervention, and both have been referred for special education evaluation. One other case was processed and classified as emotionally disturbed at the end of last year, but is making progress and requires only minimal contact with special staff this year.

So 15 students have not needed further specialized aid, another seven are being watched but are making satisfactory progress, and only two are still in need to intensive support services.

Another way of evaluating whether we've trained teachers is to examine whether teachers are developing interventions independently, or are again depending on us to help them with the same old problems. This year, teachers are assuming more responsibility for their classroom problems. Fewer formal plans have been written; only nine of the 22 cases we have discussed with teachers this year required this extended service, compared to 21 out of 25 last year.

Six "old" teachers again made referrals to us this year, but only one of these was referring children for the same problems as last year. Nine teachers who referred to us last year have not requested our services again this year. We've also picked up a couple new teachers this year.

It is our subjective judgment that some of those teachers who are again working with us are taking a more active role in designing and carrying out intervention plans. One teacher, for instance, came up with an idea for a play money token system to use with a math group that frequently was off-task and not completing work. This teacher has only used us for suggestions and feedback, rather than to generate the initial program or guide its implementation. Her implementation of this token system is superb; the kind of model to save for future training of her peers.

To facilitate teachers taking greater responsibility for behaviorally defining their problem situations and generating their own solutions, a series of three afternoon workshops on applied behavior analysis has been offered this year. Teachers now are typically expected to have their problem situation operationalized and a goal in mind before meeting with us. Depending on their level of sophistication, they are also to have some ideas about what they'd like to try for the intervention. Our role is changing in many cases from that of problem solvers to problem solution facilitators.

Another exciting possibility for future development is that of training regular and special educators concurrently. This involves bringing a small number of qualified graduate students out to the field setting, letting them work with us around for awhile, and gradually shaping their behavior as inservice consultants. We see a need to field-base teacher training for optimal development of both regular, mainstreaming teachers and special educators functioning in new roles. We hope this will be the wave of the future.

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THE PROGRAM MANAGER: A NEW ROLE FOR TEACHERS OF THE SEVERELY HANDICAPPED

Richard B. Dever and Dennis R. Knapczyk

INTRODUCTION

Recent state and federal legislation has mandated the instruction of *all* children in the public schools. It gives first priority for educational services to those who are currently the least-served, especially the severely handicapped (Anderson, Greer, and Dietrich, 1976).[1] One of the most clearly identified needs in developing such services is to train professionals to fill the instructional and supportive roles (Haring, 1977). A recent national conference attended by SEA and LEA personnel, teacher trainers, other professionals, and parents, for example, concluded that there is a tremendous need for trained personnel at all levels of service provision (Crosson, Engleman, Moore, and Pine, 1977). Without trained personnel, it is probable that few or no *truly* educational services will come into being. Rather, any services provided to this group are likely to be those traditionally given, *i.e.*, babysitting and warehousing (Wolfensberger, 1972).

The management and instructional needs of severely handicapped individuals are quite different from those of children traditionally served by the public schools (Hardman and Drew, 1977). Concepts such as "least restrictive environment" and "individual educational plan" are new and different (Switzky and Miller, 1978; Turnbull, Strickland, and Brantley, 1978). Consequently, the schools need new organizational frameworks to provide the services required to fill those needs (Spence, 1978). Almost by fiat, the role of the teacher in the classrooms for the severely handicapped will be different from that which teachers ordinarily play. This article was written to show why this role will be different, and to present a model for what it could become.

NEW RESPONSIBILITIES FOR TEACHERS

Many teacher-training institutions have begun to provide training for teachers in the area of the severely handicapped. This training is often intense, and much of it is directed specifically to the instructional needs of severely handicapped individuals. There is little evidence, however, that

[1] We are using the term "severely handicapped" to refer to all types of severe handicapping conditions, *i.e.*, moderate, severe and profound disturbance, retardation, physical disability and multiple handicaps. The use of generic term simply reflects current administrative arrangements, and the program manager concept is applicable in all of these areas.

administrative and ancillary personnel receive comparable training (Bensberg, 1974; Sontag, Burke, and York, 1976). Here we refer to the professionals who must provide and coordinate the myriad of special support services required by severely handicapped individuals. As a result, many of the services for which these people should assume responsibility either are not offered, or are provided by the classroom teacher (Miller, Miller, and Repp, 1978). It is this fact which presages the emerging new role for the teacher of severely handicapped individuals.

There are five major areas in which classroom teachers will be required to assume added responsibilities. They are: (1) curriculum development, (2) support services, (3) pre-service and in-service training, (4) least restrictive environments, and (5) community liason.

Curriculum Development

Most teachers enter a classroom to find an established curriculum when they get there. It may be in the form of a particular set of textbooks from which they are to teach, or it may be one governed by school or district-wide policy. Whichever is true, few teachers must develop a completely new curriculum when they begin teaching a class. Such is not the case, however, for teachers entering classrooms for the severely handicapped (Sontag, Burke, and York, 1976). Typically, the procedure is to give them a platitude such as "The goal of the program is to further independence," and leave them to develop their own program of instruction with little or no guidance.

When they seek help from commercial materials, teachers of the severely handicapped are usually disappointed. Although some commercial materials are available, they tend to be very incomplete, geared for a relatively small subset of learners, and require a great deal of adaptation before they will be useful. Because classrooms for severely handicapped individuals typically have a wide range of age and functional levels, the existing commercial materials tend to allow only a partial curriculum to be developed from them. Consequently, teachers of the severely handicapped must develop their own curriculum to a degree not found in ordinary classrooms (Williams, Brown, and Certo, 1976).

Support Services

Almost every student who is placed in a classroom for the severely handicapped requires some type of supportive service (Sontag, Burke, and York, 1973). In the list of these services we will find speech correction, physical therapy, occupational therapy, medical or dental services, social services, language training, psychological testing, adapted physical education, and many others. Unfortunately, a great many programs for the severely handicapped do not have the resources to provide these services to the degree usually required by the students. Too often, the classroom teacher must do the work that another professional would ordinarily perform. In addition, in programs where such services are provided, there is often little or no coordination among them (Smith and Smith, 1978). Such is especially the case when students receive more than one special service. It is also true that the support professionals

often have the final word in planning and implementing the supplementary services, and tend to do their work with little or no regard for the educational goals the classroom teacher has established. Because of the picaresque nature of these services, their potential utility to the learner's overall program is often wasted. In the absence of this coordination, the teacher will be forced to assume responsibility for integrating them into the learner's program.

Pre-service and In-service Training

Classrooms for the severely handicapped often involve many types of instructional personnel. Not only is there a classroom teacher, but also one or more paraprofessionals, ancillary support personnel, and sometimes volunteers. Paraprofessionals and volunteers cannot be expected to have much prior training. Even many professional support personnel, however, are not trained to work with severely handicapped individuals. Typically, they are trained to work with the mildly handicapped or high-functioning physically handicapped individuals. It is not at all unusual, for instance, to find support professionals just as unprepared to deal with the problems they encounter in classrooms for the severely handicapped as are the paraprofessionals and volunteers (Hardman and Drew, 1977). Consequently, the classroom teacher must assume the responsibility for providing the training they need simply because no one else is available.

Designing Least Restrictive Learning Environments

Federal and state mandates require the provision of least restrictive learning environments for the severely handicapped. This is a concept with which the public schools have not dealt previously (Switzky and Miller, 1978). Typically, the mandate is viewed only in terms of classroom placement decisions made during case conference meetings, *e.g.*, developing a "cafeteria" of educational services (Reynolds, 1962). If programs for the severely handicapped are to be truly "least restrictive," however, instruction must extend beyond the four walls of the physical facility. Repeatedly, we hear that the educational goal for the severely handicapped is "instruction leading to independence" (*e.g.*, Wolfensberger, 1972; Sailor and Haring, 1977; Snell, 1978; Luckey and Addison, 1974). Such an orientation *requires* that learners have access to the community for instructional purposes. There are many tasks, for example, related to independence which simply cannot be taught in a classroom setting, *e.g.*, using the public transportation system; shopping at the neighborhood grocery store; and learning to work in a factory. If learners are to reach the level of independence of which they are capable, much of their instruction must take place in the community (Crosby, 1978). In this sense, the classroom teacher of the severely handicapped must be able to structure least restrictive learning environments for his students. The teacher who wishes to do so, unfortunately, often finds it necessary to circumvent the administrative structure of the public schools.

Coordination of Educational Services With Other Community Services

It is apparent that the classroom teacher of the severely handicapped is usually the professional in the community who has the most complete

information about the learning needs of his students (Turnbull, 1978). Since the severely handicapped as a group require more types of community services than any other school-aged population, it is often the teacher himself who either must seek out services for his students, or must work with their parents in doing so (Swap, 1978). Many severely handicapped students, for example, require various types of health care, including such things as prosthetic devices, medication, physical and occupational therapy, and diet planning. Since most schools do not offer complete services in many of these areas, it is often left to the teacher to: (1) screen learners for the problems which require these services, (2) locate agencies in the community or state that provide them, and (3) monitor the effectiveness of the interventions prescribed.

It is clear that the classroom teacher is in the best position to assume all of these responsibilities, *i.e.*, he is the professional with the most extensive and continuous contact with his particular group of severely handicapped individuals. Yet educators tend to see the responsibilities we have listed as being "extra-instructional," and not in the baliwick of a classroom teacher. Since all of them follow directly from the mandates requiring complete educational programs for all school-aged children, however, it is apparent that a new professional role has been created. We will refer to this role as that of the Program Manager.

PROGRAM MANAGER: AN ANALYSIS OF THE TEACHING TASK[2]

A schematic diagram of the job of the program manager is presented in Figure 1. The circle on the left represents the learner as he arrives in the classroom. The learner, at this point, has a learning history and is able to do a certain number of things; for example, he may only be able to breathe, or he may be able to perform complex tasks such as interviewing for jobs. The tasks the learner actually can perform, however, are generally not known by the teacher in any great detail before the learner arrives in the classroom.

The circle at the right represents the ultimate goal for all learners: independent functioning as an adult. Many severely handicapped persons may never actually reach this status, but having it as a goal will always serve as a guide for the teacher in providing the "next thing to teach."

Stretching between "the learner in the classroom" and the goal of "the independent adult" is an instructional sequence. That is, "being an adult" consists of a set of skills that allow the person to function independent of social agencies. Immediately before becoming an adult, the person exhibits a set of skills that are prerequisite to independence; immediately before that point is another set of prerequisite skills and so forth, progressing back to the point in developmental time at which the learner is currently functioning.

To teach, the teacher must: (1) know the sequences of development of the skills required for independent living, (2) through observation, discover

[2] The job of the teacher is to teach students to perform tasks which bring them closer to independence and to apply those skills in natural life situations. Severely disturbed children exhibit many types of "inappropriate" behaviors which interfere with their instruction and require teachers and other professionals to develop interventions to reduce or eliminate these behaviors. This fact, however, does not alter either the goal of instruction or the role of the teacher, as a program manager.

PROGRAM MANAGEMENT

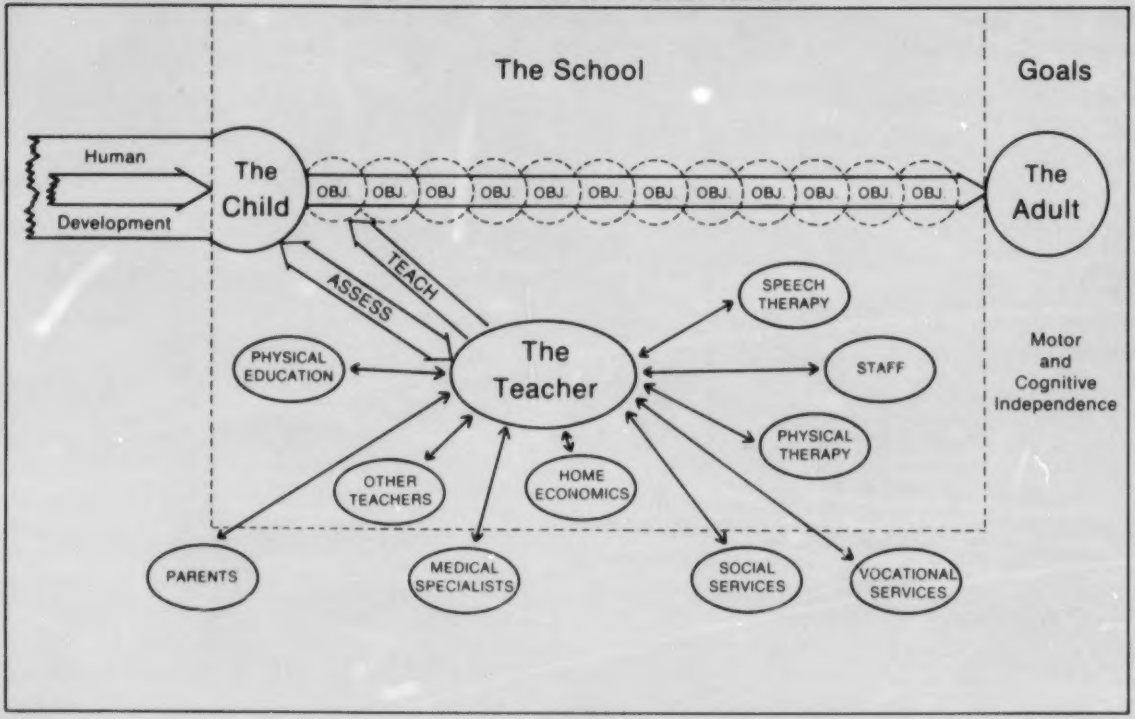

FIGURE 1

which skills the learner exhibits at the present time, and (3) on the basis of the information obtained, determine what tasks the learner needs to learn next (Marcus, 1978). If he does these things well, the teacher should be able to structure the environment in ways that will facilitate the learning of skills that progress toward independence. Development toward independent functioning will, consequently, occur at a faster rate than would otherwise be the case if the learner were left to his own devices.

The first task of the teacher when the learner enters the classroom, therefore, is to determine what things he can do now, and to discover the tasks he must learn to perform next. That is, the teacher must assess current functioning prior to attempting to teach anything. If the teacher can accurately assess the learner's skills in terms of developmental sequences, he will also be able to specify "the next tasks to teach." The teacher must then be able to provide activities which maximize the learner's attention to the tasks he must learn and which result in successful learning of those tasks.

To provide learning activities, every teacher must not only develop his own "bag of tricks," he must also be willing to call on others for assistance. That is, the implementation of activities that cause learning to occur requires the teacher to be a successful manager and organizer not only of the classroom setting (which is severely limited in its scope and potential for learning) but also of the entire environment in which the learner functions and will be expected to function.

Even with extensive training, it would be too much to expect that any one person would know about teaching all the skills required for independent living. However, it is not necessary for the teacher to do all of the actual teaching, *i.e.*, someone else may, in fact, carry out the actual instruction. But the teacher who can specify appropriate objectives both within and across areas of human development will be in a position to consult with other professionals, paraprofessionals, and non-professionals for assistance in structuring individualized programs for each of the students in the classroom. If, for instance, a physically handicapped learner must learn to walk, the teacher may call on the physical therapist (assuming one is or can be made available) for help in structuring appropriate activities in and out of the classroom. In addition, the teacher may also call on the assistance of paraprofessionals and/or volunteers to carry out the activities, or on the school administration for assistance in purchasing equipment that a learner with special needs may require. As another example, to structure the environment for a learner who needs to learn how to interact with other learners in a certain way, the teacher may call on the recreation specialist, the cafeteria personnel, the school secretaries, and/or the janitorial staff to see how they can help out. No matter who is involved in the actual instruction, however, the teacher has final responsibility for: (1) deciding what the learner needs to learn, (2) finding the people in the environment who can help structure situations that will facilitate the learning of those skills, (3) monitoring the implementation of the learner's program, and (4) determining when the instructional objectives have been attained so that new ones can be established.

Even the ancillary professional, paraprofessional, and non-professional personnel of a well-staffed school will not be able to provide enough assistance to carry out instructional programs for most severely handicapped individuals. The teacher will often be required to call on still others to assist in the implementation of the programs that he has devised (Hardman and Drew, 1977). He may call on the medical profession, for example, to provide assistance in the control of seizures, or to provide the oral surgery that will facilitate the learning of vocal communication skills in a specific learner. He may also call on the parents to conduct portions of the training program at home, or on the social worker to assist in molding the milieu in which the learner lives. He may even ask the clerk at the checkout counter at the local supermarket to take a part in an instructional activity. In other words, the entire community should, at one time or another, be involved in the learner's instruction simply because he must learn to live in the community.

In summary, the teacher who functions as a program manager first decides what skills the learners need to develop, and then plans the circumstances that will facilitate the acquisition of those skills. The teacher's role is to act as: (1) an instructional programmer, and (2) a fixed point of referral. It is the teacher who must take responsibility for seeing to it that the learner receives all the help he needs in the process of learning to become independent.

COMPETENCIES NEEDED BY A PROGRAM MANAGER

The program manager concept requires the teacher to have skills in nine major categories: (1) screening, (2) assessment, (3) curriculum, (4) resource utilization, (5) instruction, (6) training, (7) parents, (8) fixed point of referral, and (9) interdisciplinary communication.

Screening

Learners who need medical and health-related assistance but who do not receive it are likely not to learn at peak efficiency (Hardman and Drew, 1977). One of the major tasks of the Program Manager, therefore, is constantly to screen for the presence of physical problems; if one emerges, he must refer the learner to a qualified specialist for indepth diagnosis and possible treatment. It is quite likely, for instance, that undetected petit mal seizures will show up in classrooms for the severely handicapped; it is also likely that chronic or acute vision or hearing problems will be present; and that orthopedic problems such as scoliosis will develop in learners who are severely handicapped. The teacher must be aware of the signs which indicate the presence of these and other conditions, and be ready to refer suspected cases to appropriately qualified medical personnel.

In the classroom for the severely handicapped, it is also normal to find children who are already diagnosed as having physical and/or sensory problems which the teacher must constantly monitor. Children, for instance, can and do grow out of wheelchairs and prostheses that have been fitted for them at an earlier age. Also as they grow older, they need to have their medications for seizures adjusted, their frames for eyeglasses

replaced, and their hearing aides repaired. Sometimes adjustments can be made by the teacher, but when necessary, re-referrals must be made.

Assessment

A primary task of a program manager is to discover each learner's current level of functioning in order to identify his programmatic needs. The teacher, therefore, must keep abreast of developments in assessment techniques and use the various assessment instruments that are appropriate for specific groups of learners. In addition, because assessment instruments are still in a "state of the art" technology, the teacher must be prepared to develop his own assessment devices for programming purposes. In doing so, he must not only "fill in the gaps" in published assessment instruments, but also he must develop assessment instruments for specific purposes when they are not currently available, *e.g.*, in teaching toilet training, language, bus riding and job performance (Knapczyk, 1975).

Curriculum

Once assessment has been carried out, the teacher must establish an instructional program for the learner. This requires utilization of the data from assessments to figure out what the learner needs to learn next. When establishing curriculum, the teacher must be able to couch all instruction in terms of tasks the learner needs to learn so that task analytic procedures for content and process can be implemented (Gold, 1976; Knapczyk and Dever, 1977). Such procedures will allow constancy of instructional behavior on the part of all who are involved in carrying out the program, *i.e.*, they result in point-by-point specification of instructional procedures.

Instruction

The program manager concept requires the teacher to know what the child has to learn, not necessarily how to teach it. Since no one person can possibly provide all forms of instruction, the teacher must recognize when someone else may actually be the best instructor for a specific task. Therefore, he must not only be able to provide instruction himself, he must also be able to communicate with others in a wide range of occupations and skill areas.

Resource Utilization

Because the teacher may not be the best person in the environment to carry out a particular bit of instruction, it is imperative for him to be aware of the potential instructional resources in the environment. This includes both public school and community resources. The teacher, therefore, must do indepth investigations of the persons and places in the environment where instruction might be carried out. Once the teacher is totally aware of what is available, he will know where to go for assistance for specific instructional needs.

Training

The teacher who works with severely handicapped individuals must be able to provide pre-service and in-service training for non-professionals

and ancillary professional when they need it. Almost all classrooms for the severely handicapped now employ teacher aides, some have a stream of volunteers who come in to help out and many have the benefit of ancillary professional assistance. Volunteer teachers will also be found in various roles in the community. If the teacher does not train these people properly, his program of instruction will not be as effective as it could be. Every teacher, therefore, of the severely handicapped must be able to provide the training all these groups require.

Parents

Educational personnel have come to realize that parents can assume an important role in the instruction of severely handicapped learners (Fink, Edge, and Tally, 1978). Parents may not only be able to provide specific assessment data, they may also carry out certain instructional procedures at home. For these purposes, parents need information, not only about the screening activities carried out by the public schools, but also about the instructional program. Since the teacher is trained to think in terms of deliberate instruction, however, he must assume leadership in communicating his observations and program plans with the parents and assisting in their interventions. Communication with parents, therefore, is essential. Unfortunately, because of the potential emotionalism of some parents, parent-teacher communication can sometimes be difficult. The teacher, however, has the responsibility to communicate with them no matter how difficult it is to do so.

Fixed Point of Referral

Teachers are usually the professionals with the greatest single degree of contact with the learner in his day-to-day life. Therefore, the teacher must be the person who is totally aware of what is happening to the learner and be everready to communicate with others regarding the child's current needs. In doing so, the teacher must be familiar with the laws governing service provision to the severely handicapped. In addition, it is necessary that the teacher be aware of the services available to the learner from community, state, and federal agencies, and to see to it that the learner receives any support services he requires.

Interdisciplinary Communication

In their position as program managers, teachers of the severely handicapped must be conversant with the terminology used by a wide variety of disciplines. Oftentimes, it will be necessary for teachers to translate the ideas, findings, and suggestions offered by professionals in one discipline into the language used by another. This skill would be especially important in developing comprehensive individualized educational plans and in implementing an integrated program of instruction.

SUMMARY

We have outlined a set of responsibilities which must be assumed by teachers of the severely handicapped. Although many of these are "extra-instructional," there is evidence that the public schools often do not offer

these services, either because they lack resources, trained personnel, or an understanding of the complex nature of service provision for a severely handicapped population. It is also apparent that the teacher is currently in the best position to assume the responsibilities simply because there is often no one else to do so. The program manager concept was developed to respond to this perceived need.

We will not discuss or describe a program for training individuals to serve in the capacity of a program manager. Such training must be geared to the specific guidelines and policies which govern the training of teachers for the severely handicapped in each state. It is apparent, however, that to learn the skills required of a program manager, such training must be both practicum-based and interdisciplinary.

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TEACHER DIRECTED INTERVENTIONS WITH BEHAVIORALLY DISORDERED CHILDREN

Stanley H. Zucker, Robert B. Rutherford, Jr., and Alfonso G. Prieto

INTRODUCTION

The purpose of this paper is to present a type of research paradigm whereby the classroom teacher serves in the role of educational researcher. Examples will be provided of how the teacher as experimenter and the teacher as interventionist can conduct data-based research on a continuous, systematic basis in order to make programmatic and child-related decisions based upon the data provided by the students' behavior.

Traditionally, educational research has been either *correlational research* or *control-group/experimental-group design research*. Correlational research involves finding correlations between various environmental conditions and important behaviors of students (Axelrod, 1977). A correlation between two variables involves the degree to which they vary together but not necessarily the degree to which one variable causes another. Correlational research often has little utility for the individual classroom teacher because it has not been helpful in dealing with individual behavior problems or in prescribing specific teacher procedures for managing classroom behavior (Hall, 1974).

Group design research typically involves an attempt to determine which of two or more procedures is best able to produce a certain desirable outcome. In this research paradigm, two groups of children are equated on as many variables as possible. The performance of both groups is measured and then one group is exposed to the experimental condition or procedure and the other group is not. The performance of the two groups is again measured and compared and any statistical difference in performance is attributed to the experimental procedure. The weakness of this type of research from an individual classroom teacher's point of view is that it does not give information concerning which procedure is best for an individual student. In addition, the classroom teacher seldom has large groups of children demonstrating common problems to warrant the use of group design research. Finally, if the classroom teacher has a large enough sample to conduct viable group design research, it is frequently not feasible to randomly assign students to experimental and control conditions given the realities of the public schools.

An alternative type of educational research which has great utility for the individual classroom teacher is behavioral research based upon *single-subject experimental analysis designs* (*e.g.*, single case, within subject, or $N = 1$ research designs). The purpose of single-subject designs is to demonstrate a functional relationship between the dependent variables (the specific child's behaviors) and the independent variables (the procedures or interventions initiated by the teacher). In other words, single-subject designs employ the individual child as his or her own control by measuring the child's behavior over time and at periods when the intervention is in effect and when it is *not* in effect.

The advantage of this type of research for the classroom teacher is that the subjects of the research are the individual children within the teacher's charge and thus the teacher's experimental manipulations of the independent variables has direct functional utility for these children.

This measurement and evaluation of individual child behavior change relative to the presence or absence of an intervention stems from a set of behavior change procedures called *applied behavior analysis* (Baer, Wolf, and Risley, 1968). Applied behavior analysis is a systematic, performance based, self-evaluative method of changing behavior (Sulzer-Azaroff and Mayer, 1977). *Systematic*, in this instance, refers to the tightly structured aspects of this method whereby confounding variables are controlled in order that the effects of the independent variable can accurately be assessed in relation to the dependent variables. These structural aspects include specific definition of behavior, reliable methods for observing and recording behavior, and consistency of application of the intervention.

Performance based refers to the fact that applied behavior analysis is concerned with those behaviors which are observable, measurable, and countable. It is concerned with the frequency, rate, duration, intensity, or latency of these behaviors in the classroom before and after teacher intervention. The *self-evaluative* aspect of applied behavior analysis refers to analysis of the effects of the intervention on the child's behavior through repeated direct measurement of the behavior, and the application of particular single-subject or environmental designs. Two of these designs will be discussed in this paper.

STEPS TO CONDUCT SINGLE-SUBJECT APPLIED BEHAVIOR ANALYSIS RESEARCH IN THE CLASSROOM

The first step that the teacher as experimenter must take is to pinpoint the behavior of the child or children in the classroom which may be subject to modification. Sulzer-Azaroff and Mayer (1977) have identified six types of pinpointed behaviors of potential interest to the teacher-researcher. These include: (1) behaviors to increase—number of single digit subtraction problems answered correctly, (2) behaviors to *decrease*—number of verbal assaults on peers, (3) behaviors to *teach*—how to diagram a sentence, (4) behaviors to *maintain*—continued use of appropriate grammar, (5) behaviors to be *extended to new settings*—generalization of various pro-social behaviors from the resource classroom to the regular classroom, and (6) behaviors to *restrict to appropriate settings*—discrimination of running and shouting as appropriate to the playground, but not to the classroom.

The second step that the teacher-researcher must take is to record and graph the frequency, rate, duration, intensity, or latency of the pinpointed behavior prior to intervention through direct-observation procedures. The teacher keeps a numerical record of the behavior over time in order to note how persistent and consistent the behavior remains before intervention. This recording period is called *baseline* or the pre-intervention measure of the behavior. Baseline is a fundamental component of applied behavior analysis research because it provides a record of the behavior, which serves as a control or comparison for the intervention measure of the behavior. This second step also involves graphing the recorded behavior according to one of several pictorial protocols (See Figures 1 and 2). Figure 1 shows a graph of the various phases of a single-subject experiment. The left axis indicates the number of times a behavior occurs during each observation and the bottom axis indicates successive days that behavioral data is recorded. The first phase of the experiment is the baseline or A_1 phase.

The third step of applied behavior analysis research involves the application of interventions designed to alter children's classroom behavior. These interventions—the B_1 phase—generally involve changing either the antecedents or the consequences of the child's behavior. *Antecedent interventions*, which precede behavior, might involve changing instructional strategies, materials, or guidelines to enhance the chances for appropriate child responses. *Consequent interventions* involve altering the reinforcing and aversive events that follow a given classroom behavior to increase or decrease that behavior. The applied behavior analysis procedure calls for

FIGURE 1
Sample Graph of a Reversal or A_{BAB} Design.

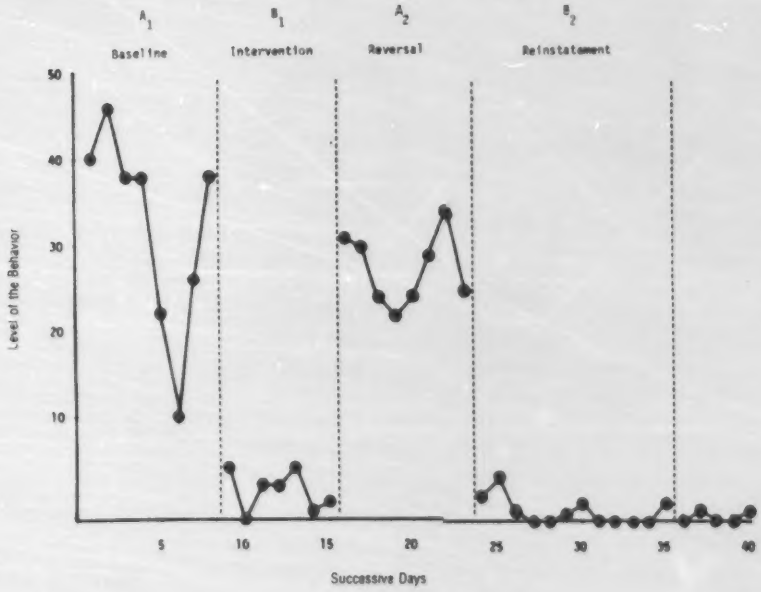
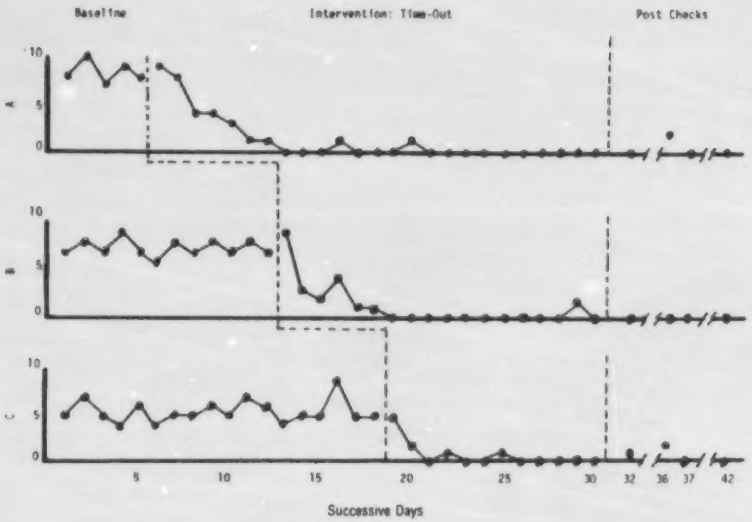


FIGURE 2
Sample Graph of a Multiple Baseline Design



continued recording and graphing of the pinpointed behavior during the intervention phase of the experiment.

The fourth step in this type of research involves evaluation of the effects of the intervention on the child's pinpointed behavior. Evaluation is accomplished through the *single-subject experimental analysis designs* mentioned earlier. There are two of these designs which have particular utility for the classroom teacher-researcher—the *reversal design* and the *multiple-baseline design*.

The Reversal Design

The reversal or ABAB design (See Figure 1) involves the temporary removal of the intervention—the A_2 phase—in order to evaluate the effects of the intervention on the child's behavior. Essentially, what is evaluated is whether or not the effect of the intervention can be replicated, that is, is behavior change functionally related to the intervention or is it the result of chance or uncontrolled variables?

There are several variations of the reversal design. The most common variation involves the stopping or withdrawal of the intervention during the reversal phase (Leitenberg, 1973). If student on-task behavior, for example, markedly increased during a systematic teacher social reinforcement intervention, teacher social reinforcement would be withdrawn, that is, not applied, during reversal. In other words, on-task behavior would be placed in a period of extinction.

Another variation of the reversal design would be where the intervention is noncontingently applied during the reversal phase of the investigation.
52 In this instance, the intervention is present during all phases but is con-

tingent upon the behavior in question only during the intervention phases. An example might be where children in a particular classroom may receive a minimum of 30 tokens per day for specific appropriate behaviors during intervention. With this type of reversal design, the tokens would still be given but not contingent upon specific behaviors. The rate of the specific target behaviors would then be measured.

A third variation of the reversal design involves differential application of the intervention procedure to some other behavior during reversal while withdrawing the intervention relative to the initial target behavior. This DRO or differential reinforcement of other behavior procedure involves continuing the reinforcement contingent upon an alternative response. An example would be where a child is taught to imitate certain verbal responses contingent upon teacher praise. If, during the reversal, the teacher praise is made contingent upon the amount of time spent in seat and not upon verbal imitation, verbal imitation responses may well decrease.

Advantages of Reversal Designs

There are a number of advantages to reversal designs in teacher directed research in the classroom. First, reversal designs permit the teacher to identify functional relationships between the intervention program and any observed changes in the child's behavior. A second advantage of reversal designs is that they provide for accountability of procedures. Because applied behavior analysis research depends upon the continuous, systematic collection of behavioral data relative to the presence of the intervention, reversals indicating a lack of a functional relationship between intervention and behavior force the teacher-researcher to look for alternative intervention strategies.

A third advantage of reversals is that they can be used as a teaching tool (Sulzer and Mayer, 1972). That is, they can be used to demonstrate the effectiveness of intervention procedures. If, for example, the teacher wishes to demonstrate the effects of a particular intervention, say a behavioral contract, to a student's parents or to other teachers, the teacher-researcher can show continuous behavioral data prior to, during, and following the contract to demonstrate the effect of the contract.

A fourth advantage of the reversal design is that because this design involves alternating phases of intervention and nonintervention, it may facilitate the student's transfer from continuous to intermittent schedules of reinforcement. Because most behavioral interventions are initially intense and involve continuous reinforcement of the behavior every time it occurs, the reversal phase, where reinforcement is withdrawn, may provide the first step towards bringing the behavior under more naturally occurring levels of reinforcement.

Limitations of Reversal Designs

There are several limitations to the use of reversal designs in classroom research. First, some behaviors, once they are acquired, may no longer be dependent upon the intervention and thus will be maintained by naturally occurring reinforcers in the environment. If a teacher-directed

intervention, for example, is aimed at increasing the cooperative play behavior of an isolate child with his or her peers, the child may continue the cooperative behavior through acquired peer social reinforcement in spite of the fact that the teacher intervention is reversed. A related limitation of the reversal design involves those behaviors that, once they are acquired, are essentially nonreversible. For instance, if a behavioral intervention program is established to teach a child the multiplication tables, once the child has acquired this skill, it is unlikely that withdrawal of the intervention will result in a loss of ability to do multiplication tables. Rate may decrease but probably not the basic skill itself.

A third potential limitation of the reversal design would involve those instances where the teacher-researcher can not accurately reverse the intervention procedure to return to previous levels of functioning. For example, if the intervention depends upon systematic teacher attention to on-task behavior and ignoring of off-task behavior, it may be impossible for the teacher to replicate baseline rates of attention and ignoring.

A fourth limitation of reversals in the classroom involves those behaviors of children which may be so dangerous or noxious that further instances of the behavior cannot be tolerated, even for a brief reversal period. Examples of behaviors which teachers may not wish to allow to reoccur would be assaultive behaviors towards self or others. If an intervention is effective in stopping a child from sticking paper clips in wall sockets, few teachers would wish to withdraw the intervention for several days and count paper clips in socket behavior.

The final phase of the reversal or ABAB design involves the B_2 phase or *reinstatement* of the intervention procedure. In this phase, the intervention is again initiated and the subsequent change in the child's behavior is observed and recorded. Once behavior is again at the desired level, generalization procedures may be initiated to maintain the behavior entirely apart from the intervention or maintain it through a modified intervention.

Multiple Baseline Design

In those instances when the teacher-researcher does not wish to institute a reversal design because of the limitations noted previously, he or she may choose to evaluate the effectiveness of the intervention through a *multiple baseline design* (See Figure 2). This design involves the establishment of baselines on several different behaviors concurrently, and then systematically applying the intervention to one of the pinpointed behaviors. If this behavior changes in the direction desired, then the same intervention is applied to the second behavior. If the second behavior also increases or decreases as desired, the intervention is then applied to the third selected behavior and so on. Experimental control is demonstrated if each behavior changes when, and only when, intervention is applied to it.

There are essentially three types of multiple baseline designs which may be useful to the classroom teacher-researcher. The first of these involves investigating the effects of the intervention on *two or more behaviors of the same child in the same setting*. For example, baselines may be

established on the hitting, kicking, and spitting on other children behaviors of Ken in the resource classroom. Intervention, say systematic exclusion time-out, is applied contingently first to Ken's hitting while baseline data is continually collected on his spitting behaviors. If exclusion time-out is effective in decreasing Ken's hitting, this same time-out procedure is applied to his kicking and subsequently to his spitting.

The second variation of the multiple baseline design would be to evaluate intervention effects *across several students who exhibit a similar behavior in the same setting*. The example here would be to measure Rob's, Al's and Stanley's hitting behavior on the playground. The teacher-researcher would apply the intervention, again perhaps contingent time-out, to Rob's behavior first. If his hitting behavior significantly decreases, the intervention would be applied relative to Al's hitting behavior, and then to Stanley's hitting.

The third variation of multiple baseline would involve measuring and evaluating the effects of a particular intervention *on the same behavior of the same child in two or more settings*. Again, we may be interested in Bruno's hitting other children in the classroom, in the cafeteria, and on the playground. Exclusion time-out may be applied to his hitting first in the classroom, if successful, then in the cafeteria, if successful, then on the playground.

The crucial factor in multiple baseline research is that baselines for all behaviors in question are begun at the same time and on-going measurement and recording of all behavior is continuous throughout the procedure. Each subsequent application of the intervention is determined by its effects on the immediately preceding behavior. That is, interventions are applied to the next behavior following change in the preceding behavior. The more closely related or functional the behavior-intervention contingency, the more powerful the conclusions of intervention effectiveness will be.

Advantages of Multiple Baseline Designs

The primary advantages of multiple baseline designs include: (1) those situations where the target behavior appears to be irreversible (2) those situations where reversals are highly undesirable because the behavior is dangerous to the child or to others, and (3) those situations where multiple behavior changes are desired. In the third instance, because reversal designs usually are limited to interventions relative to a single target behavior, multiple baseline designs provide the opportunity to systematically intervene on several behaviors over the course of the procedure. This opportunity to effect change in more than one behavior may be more realistic to the needs of the teacher-researcher where classroom behaviors rarely occur in isolation (Keefe, Kopel, and Gordon, 1978).

Limitation of Multiple Baseline Designs

The major limitation in applying multiple baseline designs is the difficulty in identifying several target behaviors which are related, but not so closely interrelated that intervention applied to one automatically generalizes to the other behaviors *before* intervention can be applied to the latter

behaviors. Mash and Terdal in discussing this potential limitation of the multiple baseline design state:

> "In the three basic types of multiple-baseline designs discussed, each has one potential weakness in powerfully demonstrating the effect of a particular experimental condition, viz., concomitant changes in the areas for which baseline data are collected. Whether this is the case in the particular instance (where) the investigator decides to use (such) a design must be determined primarily from experience. Concomitant changes that may occur as a result of implementing a contingency for one behavior (individual or situation) have to be determined empirically. In some instances, the investigator can rely on the well-documented experience of others. For example, if one were interested in evaluating classroom deportment in a multiple-baseline design across situations or time (such as morning and afternoon class periods), there already is consistent evidence showing that changes made in one of these time periods do not appreciably alter behavior in the other" (1976, p. 69).

EXAMPLES OF SINGLE SUBJECT DESIGNS
REVERSAL DESIGN

METHOD

Subject

The subject was an 11-year-old male who exhibited some severe adjustment problems in school. The major manifestation of these problems was his interruptive behavior. This subject repeatedly interrupted conversations between children, between adults, and also during group instruction. The frequency of this behavior was such that the teacher had previously sought outside help. This outside intervention consisted of the school psychologist seeing the subject once each week and recommendations that the teacher ignore the subjects's behavior. The psychologist reported improvement in the subject's behavior while the teacher noted no behavioral improvement.

After little success with this approach, the teacher decided to design a program which could be implemented and monitored by the teacher.

Setting: The study took place in the subject's classroom. This was a somewhat typical classroom for behavior disordered children, with nine children, one teacher, and one paraprofessional.

Procedure: There were nine phases and the subject served as his own control. Treatment phases involved ignoring, verbal reprimand, verbal reprimand and gesture, and praise. These treatments were selected by the teacher as being practical to deliver without disrupting the classroom situation. In fact, extra consideration was given to this dimension as the teacher did not want the other children to perceive her interactions with the subject as desirable.

General Procedure: Each session was conducted between 10 and 11 a.m. every day. This was the daily time period for group instruction in language arts. The teacher served as experimenter while the aide served as observer and recorded the subject's behavior. An interruption was operationally defined as a verbal response by the subject during
56 teacher's or other children's verbal behavior. A verbal response by the

subject even if inappropriate was not counted unless it occurred during other's verbal behavior. Data were collected a total of 34 days across all phases.

Experimental Conditions

Phase A_1: Baseline. During baseline the subject's frequency of interruptions was recorded. No responses were consequated by the teacher, although she clearly indicated that an interruption occurred by pausing or by starting her sentence over. No specific attention was given to the subject. This condition lasted three days.

Phase B: Ignoring. During the ignoring phase the teacher did not indicate an interruption. She did not pause and tried to talk through the interruption, never starting a sentence over. No specific attention was given to the subject. This condition was in effect for three days.

Phase C: Verbal Reprimand. In this condition each interruption was followed by the teacher saying, "Mark, please don't interrupt me." Following this, the teacher continued her sentence. This procedure was followed when the subject interrupted the teacher or any of the other students. This condition lasted three days.

Phase CD: Verbal Reprimand and Gesture. This condition was identical to Phase C with the addition of a gesture to accompany the reprimand. The gesture consisted of a raised finger sign where the teacher waved her index finger as if to indicate "wait" or "shame on you." This condition was in effect for three days.

Phase E_1: Praise. The subject was praised every three minutes for not interrupting. Praise was delivered regardless of the subject's interruptive behavior during the three minute period. If the subject interrupted right at a three minute interval, praise was delayed fifteen seconds. Thus, at three minute intervals the teacher said, "Mark, thank you for not interrupting; you seem to have learned how to take your turn." When the subject did interrupt, the teacher reacted as in Phase B: Ignoring. This condition lasted three days.

Phase A_2: Baseline. This was identical to Phase A_1: Baseline. This condition lasted three days.

Phase E_2: Praise. This condition was identical to Phase E_1: Praise except the time interval was extended to ten minutes between praise. This condition was in effect for three days.

Phase A_3: Baseline. This was identical to Phase A_1: Baseline. This condition lasted three days.

Phase E_3: Praise. This condition was identical to Phase E_1: Praise except the time interval was extended to thirty minutes between praise. This condition was in effect for 10 days.

Reliability

Reliability checks were made by an independent observer on 20 percent of the session. Inter-observer agreement ranged from 92 to 100 percent. This high reliability reflects the discrete nature of the behavior in question.

RESULTS

Figure 3 presents the number of subject interruptions per day across all phases. The mean number of interruptions during baseline-1 was 9.7. During ignoring, the mean was 10.7. During verbal reprimand, it was 10 and during verbal reprimand and gesture, the mean number of interruptions was 9.7. When praise was introduced, the mean number of interruptions dropped to 2. Return to baseline-2 produced 7.2 interruptions. Praise again reduced interruptions to 2.6 and return to baseline-3 indicated a mean of 10 interruptions. Finally, the last praise condition produced a mean of 2.5 interruptions over a 10-day period.

DISCUSSION

For this particular subject it appears that ignoring of his interruptive behavior or negative attention toward it were totally ineffective in reducing its frequency. Once praise was introduced, there was a dramatic decrease in the behavior in question. It seems as if this subject preferred positive attention. The level of behavior maintained in the follow-up period indicated that 2.5 interruptions was similar to the frequency exhibited by the other children in the class.

Thus, using a reversal design, a classroom teacher was able to distinguish between effective and ineffective interventions and document the effect on the subject's behavior. She was also able to test different levels of the same intervention in order to eventually find one which could routinely be used. Reliable information of this nature can only be obtained through a reversal design.

MULTIPLE-BASELINE DESIGN ACROSS SUBJECTS

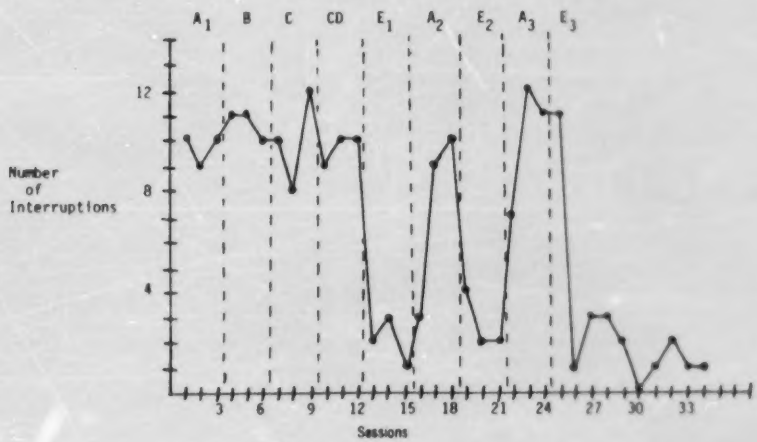
METHOD AND RESULTS

Subjects

The subjects used in the study were three caucasian males between 11 and 14 years of age. All subjects had been labeled behavior disordered.

FIGURE 3

Frequency of interruptions for all baseline and treatment conditions



Subject 1 was enrolled in a special school for severely handicapped students, while subjects two and three were enrolled in self-contained classrooms for mild to moderately handicapped children.

Procedures

In each case the target behavior for the subjects was determined by the teachers. Each target behavior had been resistant to the usual procedures used to modify behavior. All subjects had been in programs where token economies were employed. The usual social reinforcements as well as contingency management programs had been attempted. In at least two instances punishment procedures had also been used. The teacher-experiments chose to use a verbal illogical statement as the behavior change stimulus. This verbal stimulus has been reported by Ayllon (1975) and consists of an illogical statement reflecting why the subject engages in an undesirable behavior or does not perform a desired behavior. The illogical statement made by the experimenter must be obvious to the subject and therefore allows him the option of changing his behavior. The illogical stimulus is given only once and explains the behavior in such a way that the subject is free of blame. There is no verbal suggestion as to the behavior that is desired, rather the desired behavior is implied rather than made explicit.

Subject 1

The target behavior for Subject 1 was verbal outbursts when he was instructed to perform academic tasks. The illogical stimulus used with this subject was the natural part in his hair. At the time intervention was introduced, the subject was told that the teacher understood why he made negative statements and engaged in verbal outbursts, and why he could not quietly do his assignments, the reason was, no matter how much he combed his hair it always parted naturally down the middle.

Figure 4 indicates that this subject's outbursts were reduced from an average of 21 per day to 7.4.

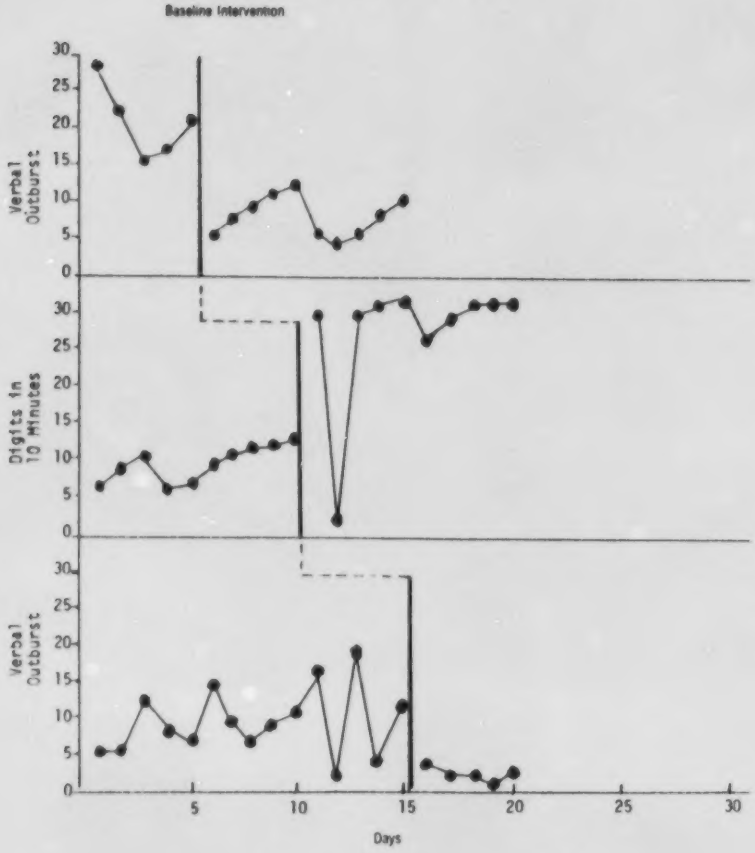
Subject 2

The target behavior was math performance. Although capable, this subject would not attempt the tasks assigned. He continually rationalized his non-completion of tasks in a variety of ways. The illogical stimulus used with this subject was: "I understand why you do not do your math assignment, it is because you are not strong enough to hold the pencil." Figure 4 indicates that there was an increase in task performance from 8.4 digits written in a 10 minute period to an average of 27 digits. Again, previous efforts to increase performance with this subject included token reinforcement, social reinforcement and successive approximation. None of these procedures were effective in changing the behavior.

Subject 3

The target behavior for this child was yelling out behavior as opposed to hand raising behavior. Efforts had been made to reduce this behavior by use of ignoring, token reinforcement and social praise. None of these

FIGURE 4
Multiple Baseline



procedures were effective in reducing the behavior. The illogical stimulus used with this subject involved the following statement: "I understand why you yell out in class instead of raising your hand to get my attention, it is because you have so many freckles." Figure 4 indicates that the subject's yelling out responses were reduced from an average of 9.3 to 2.2.

DISCUSSION

The results of the study indicate the effectiveness of cognitive restructuring (psychological reactance) in decreasing inappropriate responses. The illogical verbal stimulus is interpreted by the subjects as the reason for the inability to perform the task. Recognizing that the verbal stimulus is inaccurate, the subjects reestablish their freedom of choice by exhibiting the behavior in question, thus refuting the teacher's statement. In this fashion it would appear that a psychological reactance effect has taken place.

The use of the multiple baseline procedure allows each subject to serve as a control for the previous subject relative to the intervention procedure being used, in this case cognitive restructuring. It also allows the teacher to document the effects of his or her intervention procedure with different subjects.

CONCLUSION

Single-subject experimental designs are extremely valuable tools for the teacher as he or she initiates experimental investigations in the classroom. By obtaining direct and continuous data based upon child behavior and investigating the effects of teacher-initiated interventions relative to these data, the teacher is serving in the role of educational research—a *functional* role for the classroom teacher.

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THE IEP AS SINGLE-SUBJECT SERENDIPITOUS RESEARCH

Donna R. Eyde and Albert H. Fink

It was Victor Hugo (1802–1885) who first suggested that "There is one thing stronger than all the armies in the world and that is an idea whose time has come." With the congressional enactment of the Education for All Handicapped Children Act of 1975 (Public Law 94-142), the idea that every handicapped child has a right to a free appropriate public education has been given the power of permanent federal law. The principle that appropriate educational services must be provided for all school-aged, handicapped children at no additional cost to the parents has been mandated as part of our national policy. PL 94-142 most certainly embodies an idea whose time has finally come.

The law requires specifically that each eligible handicapped child be provided with educational services which meet that child's unique learning needs. Special education and related services are to be made available to the handicapped student as an ongoing part of public schooling. Further, for each child an "individualized education program" (IEP) must be developed to ensure that each child's needs are appropriately identified and appropriate special services provided. The IEP emerges from joint educational planning conferences of parents and professionals and can be construed, not so much a detailed plan of instruction, but rather a jointly conceived blue-print for the maximization of the potential of an individual child with special needs.

The statutory language which describes the IEP process represents the cornerstone of PL 94-142. Moreover, professional educators have come to realize that the products created by the IEP constitute highly effective techniques for providing needed special services (Haynes and Higgins, 1979). Yet the potential inherent in the IEP process as an innovative approach to school based field research has been all but overlooked.

Morse (1977) has noted that in order to evaluate the appropriateness of special interventions professionals should examine the actual classroom encounters of children. These evaluative processes, Morse (1977) observes, can be developed in actual field studies with "an N of 1". Individual "case studies" became the method for determining questions of efficacy of placement and intervention decisions. Without this form of data collection it is doubtful whether the full intent of PL 94-142 will be realized.

The need for individually based research particularly in special educators becomes more apparent when the assumptions underlying group research are closely examined. Sidman (1960) observed that group research by its closely examined. Sidman (1960) observed that group research by its design obscures and minimizes individual variation. Random selection

from a large population ensures that the effects of individual differences will average out, *i.e.*, sum to zero. Moreover, as Hersen and Barlow (1976) have noted, the better the randomization of subject selection and treatment protocols, the less noticeable the findings will be for individual subjects. Rick (1976) has pointed out too how group-based data collection procedures have made it difficult to draw clear conclusions about the relative efficacy of alternative educational placements for either individual students or groups of students. Rick (1976) also notes that since placement errors and inappropriate organizational structures are inherent in the application of group research and testing procedures to individual pupils, it would be logical to base educational decisions on research conducted on specific students in specific environments. By taking frequent direct measures of social and academic behavior the effects of various teaching materials, instructional methods, and motivational systems can be used to determine the best set of teaching procedures for pupils . . . (1976, p. 63). Thus, it may be the case that single subject research designs focusing upon ongoing collection of individual data on the actual encounters of special learners and their environments will have enormous potential for yielding pertinent information on the education of exceptional children, enabling educators to measure the appropriateness of specific interventions/placement options more effectively, subsequently satisfying both the letter and spirit of PL 94-142.

The phrase "individualized education program" as defined in PL 94-142 leads to operational definitions of a number of key concepts which would facilitate single subject research in the terms noted above. Abeson and Zettel (1977) have pointed out that "individualized" means that the IEP must be based on the needs of a single child rather than a class or group of special children. Secondly, education means that the IEP is to be limited to those aspects of the school program which are defined as special education and related services. Special education is described in PL 94-142 as "specially designed instruction . . . to meet the unique needs of a handicapped child." (Section 4 (1b). Thirdly, the term "program" means that the IEP is a statement describing what will actually be provided to that child. The regulations issued by the federal government also describe the various components could well be used to standardize the collection of individual data in a variety of school situations.

While school systems and other educational agencies may develop a variety of IEP formats to comply with federal law, the IEP must contain at least five statements. These are: (1) the child's present level of educational performance, (2) annual goals for the child and a listing of objectives to achieve those goals, (3) the specific services to be provided to the child, (4) the child's anticipated participation in the regular education program, and (5) the objective criteria for evaluating the outcomes of the proposed program and a time frame for review of those objectives.

The first standardized statement which must be included in an IEP is a description of the child's current educational functioning. This description can then serve as a pre-intervention baseline or multi-baseline measure from which to gauge the direction and magnitude of change. The initial description of the child's educational performance is an effective measure of the individual subject's condition prior to the planned intervention. The planned intervention or treatment is then operationally

defined by the statements of annual goals and objectives proposed. The proposed placement options are also well defined by the IEP. The treatment is reflected in the description of special services to be provided. Finally, the outcome measures of single-subject interventions plans are contained in the description of objective criteria for evaluating the child's encounters. The required annual review of the program will enable educators to directly measure the appropriateness of the educational program for a specific child directly.

There are numerous advantages that can be expected from the use of the IEP as a tool for single-subject research. It can provide local school systems with a technique for taking continuous measures of the results of interventions with students in that school, thus allowing schools to make educational decisions from a relevant data base. Also, over time a body of data may be collected which will enable schools to determine optimum programming accurately. As Morse suggests: If we looked at the potential of a total resource bank of intervention and then at what actually is happening in the milieu where we put the youngster, we might be able to understand a little bit better where we ought to concentrate for the future (1976, p. 164).

The IEP may then provide special educators, other professionals and parents with a powerful means both of planning for and evaluating the effectiveness of intervention/placement processes. The idea whose time has come has the audacity of legal sanction, the power of logic linked to pragmatism, and suggests the possibility of an important research innovation for use in objectifying the outcomes of the helping professions.

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RECENT DEVELOPMENTS IN THE FIELD OF BEHAVIOR THERAPY: THE EVOLUTION OF COGNITIVE BEHAVIOR MODIFICATION

Kenneth W. Howell

INTRODUCTION

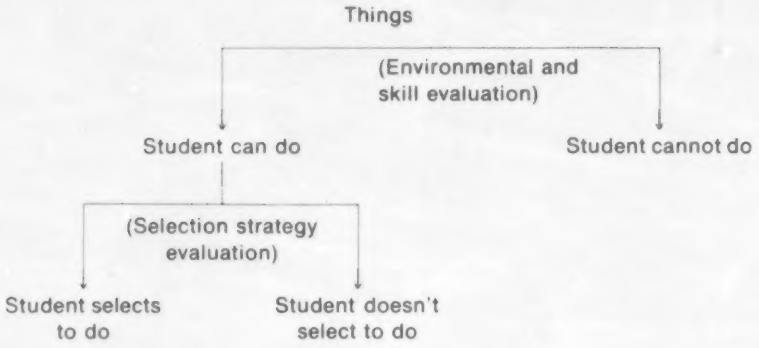
Last year at the Second Annual Conference on Severe Behavior Disorders of Children and Youth, the author presented a model for evaluating behavioral disorders (Howell, 1978). The model (Figure 1) suggests not only the evaluation of a client's behavior but also of their environment and thoughts. As an example, he used the behavior "hits peer." In the first instance (Figure 2a), the classical S_1-R-S_2 format of behavior analysis was used. In the second instance (Figure 2b), he used the S_1–thought–$R-S_2$ model sometimes referred to as cognitive/behavior analysis; the difference between the two is the inclusion of a cognitive and/or affective component between the initial stimuli and the response. At that time the author stated that this thought and/or feeling component can be viewed as a "belief system" of the student which effects the student's behavior. It was then suggested that in order for a "behavioral" evaluation to be complete, it is necessary to try and specify the nature of that belief system.

The idea of using a behavioral paradigm to deal with covert phenomenon such as thoughts is part of a fairly recent trend in behavioral psychology. This trend (sometimes referred to as cognitive/behavior mod) away from exclusively overt phenomenon has been viewed by some as a revolution in behavioral psychology. This year, the author reviews some issues being discussed relevant to this apparent change in behavioral philosophy. One of these issues pertains to the advantages and disadvantages of changing technology prior to changing philosophy.

Last year, application was discussed while excluding philosophy. In that presentation, as soon as the author got away from measuring overt conditions such as "negative verbal comments," or "bites teacher" and into covert belief systems, he made a jump that some people in the audience wouldn't make with me. What these participants seemed to be saying was "there go the behaviorists" off on some fuzzy tangent, speculating about unobservable and inferred cognitive states, the same path taken by process people from Freudians to psycholinguists.

And to some extent they were right. A conflict has developed within the behavioral camp. This conflict over how to treat covert phenomenon, such as thoughts and feelings, focuses on three issues:

Figure 1
A simplified model of behavioral curriculum.



1. Is there a revolution taking place? Is anything really changing and if it is, is the change philosophical or technological?

2. How are behavior, cognition and the environment related?

3. Are there internal characteristics (sources of variability) that tend to make people behave independent of their environment?

These issues are approached in a somewhat disjointed fashion. First, three research studies are reviewed, which seem totally unrelated to each other. Second, the researcher reviews the arguments of four authors about our three issues. Third, he brings the research and the arguments together.

RESEARCH REVIEW

Speech Perception In Infants
P. D. Eimas, E. R. Siqueland, P. Jusczyk, and J. Vicorito
Science, *171*, 1971, pp. 303–306.

In earlier studies these researchers (and others) have found that when synthetic speech sounds are varied acoustically, adults can perceive the variation. In addition, adults can more easily discriminate variations that cross phonemic boundaries than they can intra-phonemic variations. Individuals most successfully discriminate universal phonemic categories such as the boundary between the voiced and voiceless form of the stop consonants /b–p/, /d–t/, and /g–k/. The investigation of interest here studied the ability of one- and four-month-old infants to make these same discriminations between synthetic speech sounds. The infants were given a nipple with a pressure transducer in it that sent a signal to a recording device in order to monitor the frequency of their sucking. Once a baseline had been established, the synthetic speech sounds were presented. If the infant perceived a "new" sound, the sucking was interrupted as seen in Figure 3. Such interruptions were not found to occur when the researchers varied the same phoneme acoustically. They did, however, occur when the sounds crossed the phoneme dimension by going from voiced to unvoiced. The authors interpreted the results as

Figure 2a
Applied behavioral analysis.

Antecedents S^1	Behavior R	Consequences S^2
1. Classroom	Student hits peer	1. Peer runs away
2. Free time		2. Negative comments stop
3. Morning		3. Teacher puts kid in time out
4. Low structure		
5. Peers give negative comments		

being indicative of a biologically based predisposition towards the categorical perception of speech sounds.

"Availability: Heuristic For Judging Frequency and Probability"
A. Tuersky and D. Kahneman
Cognitive Psychology, 5, 1973, pp. 207–232.

In the second study subjects were asked to judge whether letters (R for example) appear in words most frequently in the initial or the third letter position. Of the 152 subjects who engaged in the experiment, a significant number (105) said the letters appeared most frequently in the initial position. This is the wrong answer. When rewards were presented for accuracy and additional letters were given, the subjects continued to make incorrect judgments about the letters' frequency. The authors concluded that the subjects' answers were incorrect because they based their judgments on the ease with which they could recall instances of the letters appearing in the two positions. It is easier to recall words beginning with a target letter, and this ease of recall (termed availability) was mistaken for the actual frequency of occurrence. Because ease of recall is related to past experience, the study shows that perception is modified by previous reinforcement.

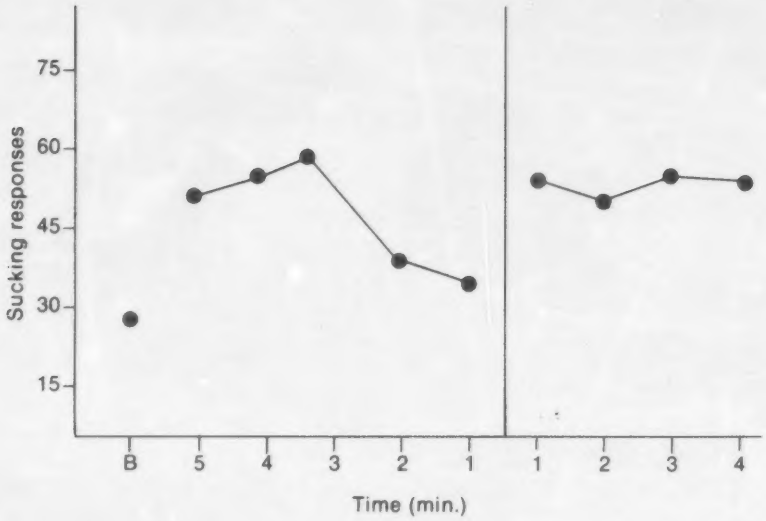
"The Role of Expectations and Attributions in the Alleviation of Learned Helplessness
C. S. Dweck
Journal of Personality and Social Psychology, *31*, 1975, pp. 674–685.

In the third study, the subjects were "helpless" learners. Helpless learners are those who expect to fail at tasks and whose performance

Figure 2b
Applied cognitive-behavioral analysis.

Antecedents S^1	Behavior R	Consequences S^2
1. Classroom	Student hits peer	1. Peer runs away
2. Free time		2. Negative comments stop
3. Morning	*Thought* "If I let them talk to me that way I'm a sissy."	3. Teacher puts kid in time out
4. Low structure		
5. Peers give negative comments		

Figure 3
Categorical perception in infants.



deteriorates in the face of failure. In order to obtain a pretreatment measure, the subjects were given math problems to work, which were selected according to their math skills. The students worked several sheets of problems each day and their accuracy was recorded. The problems were graded as the students worked and feedback about accuracy and tokens were given. After 10 days, special sheets with some problems beyond the student's skill level were introduced. When the student failed these items, the researcher said, "You've got too many wrong; you don't get a token." The effect of this failure on subsequent work was then noted.

The students were then divided into two treatment groups. Both groups underwent daily lessons in which they were assigned to work 15 sets of problems. For one group—the *success only* group—the criteria was low enough to guarantee success on every set of problems. For the second group—the *attribution retraining* group—the same procedure was followed except the criteria for two or three of the 15 trials was set so high that failure on those two or three trials was unavoidable. When these students failed at a trial, the experimenter verbally attributed the failure to insufficient effort by saying, "That means you should have tried harder."

At the end of the intervention, the pretreatment procedure was repeated. By using this procedure as a pre- and post-test, an analysis of the treatment effect could be obtained. The data showed that when the *success only* students experienced failure, their success on subsequent problems decreased by about 50 percent before the training and also after the training. The *attribution retraining* group's success also was decreased by 50 percent before the training but by −9.2 percent (meaning they actually improved after experiencing failure) in the post-training

(Figure 4). The authors interpreted these results to indicate that the way a person perceives the consequences of their behavior can be changed and that even when there is no change in the consequences, the change in their perception will alter their subsequent behavior.

DISCUSSION OF THE ISSUES

The positions of four authors, who have decided to enter the current debate about the status of our three original issues, are summarized in this section.

Mahoney (1977) speaks of a "revolution" in psychology. As a result of this revolution he sees cognitive psychologists and behaviorists merging. This consolidation he believes is the result of the dissatisfaction of both sides with their own practical limitations. Mahoney's basic assumptions are that:

1. We respond to the cognitive representation of our environment rather than to the environment itself.

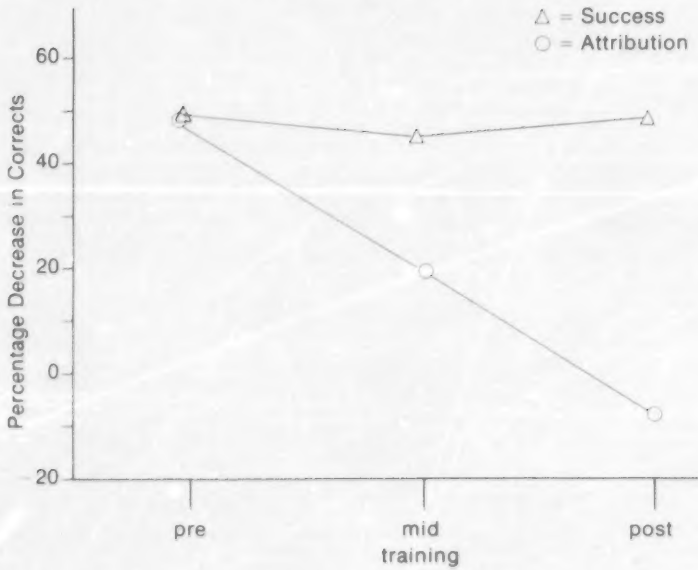
2. These cognitive representations are learned.

3. Human learning itself is cognitively mediated.

4. Thoughts, feelings, and behaviors are causally interactive.

As primary proof of his assumptions, he cites the observation that our expectations and/or beliefs are better predictors of our behavior than is our environment. He goes on to state that these private events (expectations and beliefs) can be measured, used as data, and changed.

Figure 4
The effect of attributing failure to effort.



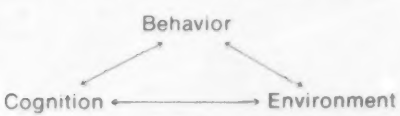
In a very different article, Wolpe (1978) responds to some of Mahoney's points and raises several of his own. His article begins by taking issue with the idea that mental activity can be observed. He cites Skinner to make the point that one of the primary values of *behaviorism* has been its adherence to the idea that data must be observable and subject to third-party verification. Wolpe attacks the idea that there is a true revolution taking place. First, he notes that behaviorism has never been predominant in psychology and that a return to the traditional cognitive orientation is more of a regression than a revolution. But mainly he argues that cognition is simply a type of behavior and, therefore, not the cause of behavior. He cites studies which show that perception (a type of cognition) is not a barrier between the organism and its environment, but rather an active response of the nervous system as is any behavior. Cognition, therefore, *is* behavior, not the cause of it.

Bandura (1978), in something of a philosophical turn-around, aligns himself with Mahoney, and argues for the existence of intermediary cognitive processes. His main point is that behavior, cognition, and the environment all interact reciprocally (Figure 5). He discounts the view that environment is the exclusive cause of behavior by noting that our behavior has shaped our environment. He also argues that when a stimulus occurs, the individual will react by choosing a response from among those which are ecologically available. The choice itself will be made based upon cognition which is the result of past social/learning experience. The effect of choosing and executing a behavior may be to shape the environment, which will modify the ecological availability of later responses. Bandura argues that within certain constraints humans are free agents, and that they express their freedom through choices which are based on cognition.

Deitz (1978) discusses the debate itself as opposed to the different positions. The effect of his discussion, however, is to align himself with Wolpe. Deitz evokes the distinction between science and technology. He outlines the assumptions of scientific investigation in the behavioral area. He then shows how the cognitive/behaviorists are violating these assumptions. His argument is based on two premises: (1) the quality of the data is of supreme importance in scientific research, and the data required for cognitive studies differs from environmental data (it isn't as good) and (2) his second point is that the variability in human behavior may have its source either inside the organism or outside of it. Studies of external variability have been valuable and are not yet complete, so it is premature to investigate internal sources. Deitz's paper is particularly valuable as it does not focus on what is being studied as much as it focuses on how and why it is being studied.

At the beginning of this paper, three issues were listed. Let's see how well these issues were addressed. *First* . . . Is there a revolution in behavioral

Figure 5
A reciprocal model of behavior.



philosophy? Mahoney says "Yes," and Wolpe says "No." While both acknowledge change, their disagreement centers on the *second* issue which is the relationship of behavior, cognition and the environment. Everyone seems to agree that people are not the same as their environment, but there is disagreement about the separation of cognition and behavior. To oversimplify Wolpe, he seems to say that physical and mental activity are the same because they both are expressed through neural excitation. It seems to me that Wolpe is certainly correct that both behavior and cognition rely upon neural mechanisms. These mechanisms, however, may also be viewed as the medium for their expression, not their defining characteristic. Sharks and starfish are both dependent upon water, but there are functional differences between the two that would argue against confusing them. Similarly there are functional differences between blinking an eye, perceiving a chair, and considering suicide. The fact that neurons fire in all three cases does not functionally describe all three activities. Self-destruction has greater meaning to us than eye blinking because we want to *change* it.

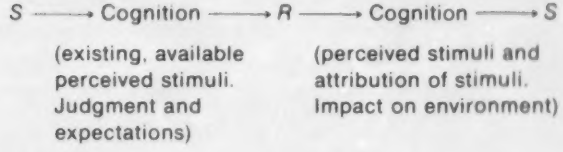
What is viewed as a change in philosophy may actually be a change in purpose. The change being away from understanding the eye blink or self-destructive thought and towards altering it. Deitz says such a change is premature in that it involves the application of a technology in the absence of information about how the technology functions. His point is well taken, and appears to come from a scholarly perspective, which is not heavily represented in the social sciences. Still, I must take exception to it, if only on the grounds that the leap over understanding to application is commonplace. Millions of people in this country are prescribed medications to alter their moods chemically in the presence of almost no information about how the chemicals work. Medication is long on technology, but short on science.

The successful application of anything is more directly dependent upon technological and engineering advancements than on theoretical ones. It is entirely possible for a sound theory to be useless in terms of direct application, just as technological innovations may lie dormant for decades waiting for the theoretical emphasis necessary to make them popular (i.e., solar energy). In the case of theory and technology, neither can justify or negate the other. They are different. The development of new reciprocal models of behavior is bound to confuse both theoreticians and practitioners. It will really confuse those of you who want to be both. This is partly because behaviorism has never had a philosophy—it was portrayed as strictly empirical. What it has had, however, is technology. Recent major changes in educational practice including contingency management, programmed instruction, and precision teaching have all been behavioral in their origin. These examples of educational technology have proven instruction value, but their oversimplified theoretical components have left something to be desired.

THE RESEARCH AND THE ISSUES

In order to tie some of these theories together, one must examine the conference topic—*behavior disorders in youth*. During the first segment of the paper, the author presented the results of three studies.

Figure 6.
Cognitive mediators of the operant model.



The Eimas study showed that infants make categorical discriminations between sounds, which they have not yet produced. Because they haven't produced them, they have not been reinforced for them. The results of this study would seem to cast serious doubt on a strictly operant model of perception. It implies an *internal* source of human variability.

The Tuersky and Kahneman study showed that subjects mistake the availability (ease of recall) of an instance for its frequency in the environment. A major assertion of the study is that people arrive at solutions to problems through the ecological occurrence of the solutions. Those solutions, which are ecologically available, are those which are easiest to recall. If ease of recall is partly a function of past learning and partly a function of the environment, the reciprocal relationship between the environment and cognition is obvious.

The Dweck study showed that the way students view an aversive event (failure on a school task) determines their reaction to that event. If a child believes it has failed because of a lack of ability, the likelihood of him/her persisting at the task is decreased.

All of these studies cast some doubt on using a purely operant paradigm to assess and treat students. The traditional S–R–S model seems to be mediated on several locations by environmental and cognitive factors. This leaves us with the more complex model shown in Figure 6. Whereas, this model may seem overwhelmingly complex when compared to the streamlined earlier model, it is better able to account for the complexity of behavior disorders.

Behavioral theory has given us a set of so called "Laws of Learning." These theories have in turn led to a technology including programmed instruction, contingency management, and other techniques lumped loosely under the heading of "behavior mod." These techniques work, but they don't work all the time. When they don't work there are two probable explanations: First, they were implemented poorly, and second, they were inadequate given the student, setting, and behavior involved. In those cases where the theory was inadequate, I believe the error was one of over-simplification. Human behavior is complex, and the movement toward more intricate behavioral theories is justified. Whether or not people are free remains to be seen. But free or not, I'm sure they aren't simple.

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THE RELATIONSHIP BETWEEN COGNITIVE PROFILES, LEVELS OF ACADEMIC ACHIEVEMENT AND BEHAVIOR PROBLEMS

Charles A. Letteri

OPERATIONAL DEFINITIONS OF TERMS EMPLOYED IN THIS PAPER

Field Independence vs. Field Dependence—An analytical, in contrast to a global, way of perceiving which entails a tendency to experience items as discrete from their background and reflects ability to overcome the influence of an embedding context. (Witkin, *et al.*, 1962)

Scanning—A dimension of individual difference in the extensiveness and intensity of attention deployment, leading to individual variations in vividness of experience and the span of awareness. (Holzman, 1966; Schlesinger, 1954; Gardner and Long, 1962)

Breadth of Categorization—Consistent preference for broad inclusiveness, as opposed to narrow inclusiveness, in establishing the acceptable range for specified categories. (Pettigrew, 1958; Bruner and Tajfel, 1961; Kogan and Wallach, 1964)

Cognitive Complexity vs. Simplicity—Individual differences in the tendency to construe the world of social behavior, in a multi-dimensional and discriminating way. (Kelly, 1955; Bieri, *et al.*, 1966; Scott, 1963; Harvey, Hunt, Schroeder, 1961)

Reflectiveness vs. Impulsivity—Individual consistencies in the speed with which hypotheses are selected and information processed with impulsive subjects tending to offer the first answer that occurs to them, even though it is frequently incorrect, and reflective subjects to look at various possibilities before deciding. (Kagan, *et al.*, 1964; Kagan, 1965)

Leveling vs. Sharpening—Reliable individual variations in assimilation in memory. Subjects at the leveling extreme tend to blur similar memories and to merge perceived objects or events with similar but not identical events recalled from previous experience. Sharpeners, at the other extreme, are less prone to confuse similar objects and by contrast may even judge the present to be less similar to the past than is actually the case. (Holzman, 1954; Holzman and Klein, 1954; Gardner, *et al.*, 1959)

Tolerance for Incongruous or Unrealistic Experiences—A dimension of differential willingness to accept perception at variance with conventional experience. (Klein, *et al.*, 1962) (Definitions in Messic, 1970)

Cognitive Styles—ways of achieving intellectual goals which are general enough to be characteristic of a large segment of one individual's activity and to distinguish him from other individuals in search of the same goals. Their stability suggests that considerable use can be made of these concepts in the description and explanation of human behavior. (Bourne, 1971)

Cognitive Profile—a dynamic combination of several distinct cognitive processes necessary for intellectual achievement and development.

High Performance Profile—composed of the following dimensions: complex, sharpener, tolerant for ambiguous information, analytical, narrow, focuser, reflective.

Low Performance Profile—composed of the following dimensions: simple, leveler, intolerant for ambiguous information, global, broad, non-focuser, impulsive.

Augmentation—addition of academically appropriate cognitive style dimensions to be cognitive repertoire of those subjects having academically inappropriate cognitive profiles.

Transfer training—practice the utilization of augmented skills in a variety of academically related tasks.

Academic liabilities—"a disorder in one or more of the basic psychological processes involved in understanding or in using language spoken or written which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations." (Federal Register, 1978) In this study moderate to severe liability is defined as grade level achievement ranging from .5 grades and more below present grade-level placement. Grade level achievement is determined by standardized test scores.

INTRODUCTION

Each individual has the right to an equal educational opportunity (Federal Register 1977, Vol. 42, No. 163—Revised 1978—Sec. 121A.5). The placement of children in the presence of equal educational elements such as materials, facilities, and personnel does not insure they have equal intellectual access to those elements. Equal intellectual access here means possession of a repertoire of cognitive processes and abilities which form the basis for how one learns and without which children will experience moderate to severe academic liabilities and concomitantly moderate to severe behavior problems in school. However, "How to learn is, in itself, something that has to be learned, though it is rarely taught in the schools" (Jordan, 1973).

Therefore, in order to address the issues of insuring equal intellectual access and appropriate behavioral patterns on the part of learners, research must first establish a sound theoretical base vis-a-vis basic cognitive processes and abilities (cognitive styles) (Labouvie, 1973). In addition, it must be assured that each individual learner is taught and trained

how to effectively utilize these processes and abilities appropriately in learning situations. These individual processes and abilities, cognitive styles, are prerequisite to learning itself and *together* constitute the unique mode of intellectual operation (Cognitive Profile) that can be utilized to analyze, describe, and predict how an individual learns and are directly related to individual behavior patterns.

Current testing and measurement programs employed in schools do not provide educators with the vital analytical and prescriptive data needed to design and implement Individualized Educational Programs aimed at augmenting the basic thinking strategies of children experiencing moderate to severe academic and behavioral problems. With increasing emphasis on and accountability for basic learning and competencies, educators must have reliable data related to the strategies children employ in learning if higher levels of achievement are to be realized for all children. The current testing and augmentation research program, being conducted by the Center for Cognitive Studies, will provide educators with reliable analytical and prescriptive instruments, plus materials and procedures needed to insure each child has equal intellectual access to educational opportunities, knows how to learn from the experience and, thereby, increase success in academic tasks. This, in turn, will lead to an alleviation of the failure-anxiety cycle which will reduce the incidence of school-related problem behaviors.

Results of Current Research

As a result of research efforts during the last two years, three pilot studies (n 200), the staff of the Center for Cognitive studies has discovered two specific types of Cognitive Profiles. Each of these seven dimensional profiles is capable of significantly differentiating ($p = .01$ or better) subjects into high academic performers and low academic performers, with all those subjects experiencing severe behavior problem having low cognitive profiles.

The Cognitive Profile significantly associated with High Achievement levels in academic performance as measured by standardized tests is: Complex, Sharpener, Tolerant for Ambiguous Information, Analytical, Narrow, Focuser, Reflective. The Cognitive Profile significantly associated with Low Academic Achievement and severe behavior problems is: Simple, Leveler, Intolerant for Ambiguous Information, Global, Broad, Non-Focuser, Impulsive.

In order to test if any of the individual dimensions could significantly differentiate the subjects into high and low academic performers a *t* test for significant difference was performed across all areas of achievement for each of the seven dimensions. The results follow:

t test of significance between standardized test score means and individual cognitive style articulation

	Reading Comp.	Language	Math	Composite
Complex-Simple	.7	.5	.5	.6
Tolerant-Intolerant	.3	.1	.4	.3

Scanning	.2	.2	.3	.2
Leveling-Sharpening	.2	.2	.3	.2
Reflective-Impulsive	.9	.8	.5	.5
Broad-Narrow	.9	.5	.9	.9
Field Dependent-Independent	.5	.4	.8	.6

None of the individual cognitive style dimensions alone are able to separate low performers and high performers into significantly different ($p = .05$) and differentiated groups. A similar comparison was done on two dimensions and three dimensions. It was not until four dimensions were compared and matched that low performers/high performers were separated into two significantly different and differentiated groups.

A *t* test for comparison was performed on all areas of achievement scores for the high-achievement profile groups and the low achievement profile groups. Results of the test are:

	t test of significance between standardized test score means of high cognitive profile subjects and low cognitive profile subjects		
Language	$t = 5.04$	$df = 8$	$p = .001$
Reading Comprehension	$t = 3.35$	$df = 8$	$p = .01$
Study Skills	$t = 5.82$	$df = 8$	$p = .001$
Math	$t = 5.90$	$df = 8$	$p = .001$
Composite Score	$t = 6.09$	$df = 8$	$p = .001$
I.Q.	$t = 3.71$	$df = 8$	$p = .01$

All *t* scores were significant at .01 or better, therefore, separating the high achievement profile subjects and the low achievement profile subjects into two significantly different groups.

To determine if each individual in the high-achievement profile group was, in fact, a high achiever and each individual in the low-achievement profile group was, in fact, a low achiever, a comparison was run on the range of scores between each of the two groups:

	Comparison of standardized test score ranges between high cognitive profile subjects and low cognitive profile subjects.	
	High Profile Ranges	*Low Profile Ranges*
Language	8.7 to 11.6	4.8 to 7.2
Reading Comprehension	8.9 to 11.6	4.4 to 7.7
Work Skills	9.5 to 11.4	5.2 to 7.1
Math	9.4 to 11.1	4.8 to 7.6
Composite	9.7 to 11.1	4.7 to 7.3

All high-achievement profile subjects were above grade level on all measures of performance and all low-achievement profile subjects were below grade level on all measures of performance; therefore, the cognitive profile is capable of differentiating each subject in both groups.

Relationship to Behavior Problems

A further analysis of data revealed that those middle school subjects who were experiencing moderate to severe behavioral problems in school all (100 percent) had low cognitive profiles.

This data clearly indicates a significant relationship between low-cognitive profiles and moderate to severe behavioral problems in school and lends support to our hypothesis related to the general impact of an individual's cognitive profile on academic and social performances in the classroom.

In addition, in a sample group of inmates, currently at a Vermont Correctional Center, all (100 percent) had low cognitive profiles.

For the two sample groups, there is a high degree of similarity and in some cases, a direct match in the cognitive profile articulation of the subjects.

A tentative, cautious conclusion related to this specific data could be that for middle-school subjects having low-cognitive profiles and exhibiting school-related problem behaviors there might be a tendency for these problem behaviors to continue and to increase in severity.

Results of Current Research Conclusions

The conclusion, then, is that the subjects having high achievement cognitive profiles are significantly different as a group and individually differentiated from those subjects having low-achievement cognitive profiles. This supports the goals of our study, related to both the need to measure and describe a cognitive profile and the need to augment several cognitive profile dimensions simultaneously, to achieve longlasting effects.

The main proposition guiding our research efforts to date is: By augmenting those dimensions of a subject's cognitive profile related to a low-performance profile, there will be a significant change in their direction toward the respective dimensions of a high-performance profile. This change in cognitive profile direction will be reflected in a correspondingly significant improvement in the subject's academic performance as measured by standardized test scores, and will lead to a reduction in school-related problem behaviors.

RELATED RESEARCH: COGNITIVE STYLE AUGMENTATION: MODELING AND TRAINING

Recent research has indicated that individual cognitive style dimensions are trainable and modifiable. For example, Heider (1971); Denny (1972); Meichenbaum and Goodman (1971); Bush (1975); and Lee (1953), have demonstrated that either directed training or modeling is effective in changing the cognitive style dimensions of the individual learner with a corresponding change in his/her performance in specific learning tasks and, that this training and modification of cognitive style dimensions was persistent throughout follow-up studies. However, the findings are not generalizable to a variety of learning tasks.

In particular, investigators have been interested in the modification of cognitive impulsivity. Kagan, Pearson, and Welsh (1966) have attempted to train, in three individual sessions, inhibition of impulsive responding by requiring the child to defer his answer for a fixed period of 10 to 15 seconds. During this period, the child was encouraged to study the stimuli in the task and to think about his answer, *but he did not receive training in more efficient procedures to employ during this interval*. Significant changes in latency or decision time occurred, but no corresponding significant change in errors was evident. Debus (1970) examined the usefulness of filmed modeling of reflective behavior and found a decrease only in decision time, and like Kagan, Pearson, and Welch (1966), no corresponding change in errors. The studies by Kagan, *et al.* (1966) and Debus (1970) *have concentrated on increasing latency times without paying sufficient attention to inducing improved cognitive and/or scanning strategies in the impulsive child*. Siegelman (1969) and Drake (1970) have demonstrated that *different attentional and cognitive strategies* seem to underlie the performance of impulsive and reflective subjects. The data from Siegelman and Drake indicate that the impulsive child on the MFF test (a) displays a greater *biasing of attention* both in *extent of scanning* and in *number of alternatives ignored*; (b) is simply in search of some variant that *globally* resembles the standard and is *not very discriminating or analytic* in his viewing. These statements by Siegelman and Drake demonstrate clearly the implication of several cognitive dimensions operating simultaneously in any given task. They mention specifically "extent of scanning" (Focus–Non-Focus); "alternatives ignored" (Leveling-Sharpening) (Breadth of Category); and global and analytical (Field Dependence-Field Independence). In other words, while a subject may seem to be impulsive in a given task, there are several other dimensions of cognition that must be taken into account in this behavior. No one dimension can account for a specific performance, it is rather a combination or profiles of dimensions that must be studied. This supports our research findings and demonstrates direct implication for an augmentation program.

The goals of training procedures (Meichenbaum, 1971) were to develop for the impulsive child a cognitive style or learning set in which the child could "size up" the demands of a task, cognitively rehearse, and then guide his performance by means of self-instructions, and when appropriate, re-inforce himself.

On the decision time measure in Meichenbaum's study, two treatment groups significantly ($p < .05$) slowed their decision time relative to their own prior performances and relative to the control groups performance. The modeling plus self-instructional training group which slowed the most was significantly different ($t = 8.10$, $df = 8$, $p .001$) from the modeling-alone group. The analyses of the error scores indicated that only subjects who *received modeling plus self-instructional training* significantly ($p .05$) improved their performance relative to the other two groups and relative to their own prior performances.

In summary, the results indicated that the cognitive modeling plus self-instructional groups was most effective in *altering decision time and in reducing errors*. The impulsive children, after self-instructional training, seem to be approaching psychometric tasks differently, taking their time,

talking to themselves, and improving their performance. In other words, a complete program involving a *multi-dimensional approach to cognitive performance is needed for improvement in given academic tasks*.

The analyses of a four week follow-up assessment by Meichenbaum revealed that the cognitive training group maintained their improved performance on the test battery, relative to the attentional and assessment control groups. The results of the study proved most encouraging and suggested that a cognitive self-guidance training program can significantly alter behavior of impulsive children (Meichenbaum, 1971). These findings lend further support to our goals related to a cognitive profile and its augmentation.

In accordance with Ault (1973), we may tentatively conclude that cognitive style may be best understood by placing the emphasis on the strategy an individual uses in evaluating problem-solving situations, rather than on the disposition for long or short decision times. Reflectives may then be characterized as displaying more *flexibility* by employing strategies that take into account the requirements of the current task and allow them to perform accordingly.

To understand the differences in the strategies of reflectives and impulses, and in that sense, the dynamics of cognitive style (implication for several simultaneously operative cognitive style dimensions, *i.e.*, Cognitive Profile), another important question remains to be answered—namely, what accounts for the failure of impulsives to employ mature strategies? Ault (1973) found that reflectives and fast-accurate children used a more mature, constraint-seeking strategy in a 20-questions game, whereas impulsives used the less mature strategy of guessing specific items. It is this difference due to the fact that impulsives do not have the more mature strategy in their repertoire? Are they simply unaware that it is applicable in that situation? Or do they lack the "patience" required to logically and efficiently narrow the range of possibilities? An examination of the conditions under which impulsives can be made to employ mature strategies may shed light on this question (Bush, 1975).

Our Experimental Augmentation Program directly addresses this most vital question. Pilot research conducted by the Center for Cognitive Studies in this area with children and adults indicate that for academic and social tasks, these strategies are not present in the subject's repertoire of cognitive skills. The subject must be taught these skills and how to transfer (generalize) these skills to different academic and social task situations through the use of modeling and training techniques. Only then, will we, as educators, be able to insure that each individual has equal intellectual access to educational opportunities, can learn from and experience success in academic tasks and, thereby, break the failure-anxiety cycle associated with behavioral problems in school.

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PERCEIVED ROLES AND BEHAVIORALLY DISORDERED MINORITY STUDENTS

Kathleen M. McCoy and Alfonso G. Prieto

ABSTRACT

Since teachers are primarily responsible for the education of all children, many studies have specifically concentrated upon the attitudes of regular and special education teachers toward exceptional children. The results of many of these studies have shown that children clinically labeled were viewed less positively than normal children or exceptional children who were not labeled. Labels receiving the most negative ratings were the emotionally disturbed and the behaviorally disturbed. Teacher expectancies generated from classification systems are also found in ethnic or racial labels.

Besides the previously cited literature, which indicates that students' and teachers' perceptions are related to ethnicity and classification, there is also evidence to indicate a possible relationship between expectation and sexual role performance. The purpose of this study was to examine the relationship between the special education label behaviorally disturbed, *race and student and teacher perception on scores of the modified BEM Sex Role Inventory (BSRI). Subjects used in this study were 16 male Mexican-American students and 16 Anglo students, who had been categorized as emotionally handicapped, as well as 16 Mexican-American and 16 Anglo regular education students. The students were 10, 11, or 12 years old. The students were enrolled in several metropolitan Phoenix, Arizona, districts. The findings of this study suggest that cultural labels, Mexican-American and Anglo, may not influence self-perception. The labels* behaviorally disturbed *and* normal *differentiated groups in terms of self-perception. A third finding suggested that teachers' perceptions of behaviorally disturbed and normal students may not match the students' self-perceptions.*

One of the most fervently debated issues in special education has been the long-standing practice of labeling children. Classifying children according to disability categories has been perpetuated by legal and administrative rationales (Deno, 1970). Within special education, labels can and do impute negative stigma (Dunn, 1968; Johnson, 1969; Elliot, 1971; Reynolds and Balow, 1972). The proposition that a person's expectation for another may come to serve as a *self-fulfilling prophecy* is firmly entrenched in the field of special education (Beez, 1968; Rosenthal, and Jackson, 1968; Good and Brophy, 1971).

Since teachers are primarily responsible for the education of all children, many studies have specifically concentrated upon the attitudes of regular and special education teachers toward exceptional children (Mazer, 1971; Panda and Bartel, 1972; Good and Dembo, 1973; Salvia, Clark and Ysseldyke, 1973; Jones, 1974). The results of many of these studies have shown

that children clinically labeled were viewed less positively than normal children or exceptional children who were not labeled. Labels receiving the most negative ratings were the emotionally disturbed and the behaviorally disturbed (Good and Dembo, 1973; Hughes, *et al.*, 1973; Prehm, McManman, and Woltag, 1977).

Teacher expectancies generated from classified systems are also found in ethnic or racial labels (Leacock, 1969; Jackson and Cosca, 1974; Kelly, Bullock and Dykes, 1977; Zucker and Prieto, 1977). Additional studies indicate that teachers tend to view students of their own cognitive style more favorably and to give better grades to these students than to students whose style differed from their own (de la Laz, Diaz-Guerrero, and Tapia, 1966; DiStafano, 1970). Jackson and Cosca (1974), for instance, found that teachers praised or encouraged whites 35 percent more, accepted or used the ideas of whites 40 percent more, and directed 21 percent more questions to whites than they did to Mexican-Americans. Most teachers and Anglo students are significantly more field-independent than Mexican-American students (Mebane and Johnson, 1970; Ramirez, 1973; Ramirez and Price-Williams, 1974).

Besides the previously cited literature which indicates that students' and teachers' perceptions are related to ethnicity and classification, there is also evidence to indicate a possible relationship between expectation and sexual role performance.

It is also reported that the school environment serves to acculturate the student. One aspect of this acculturation is to transmit traditional notions of sex roles to children (Harris, 1975; Lee, 1975). There is further evidence that persons who manifest certain characteristics that are stenotyped as being masculine are often perceived in more positive light than people who manifest characteristics that are associated with feminity (Bem, 1975).

Generally, it has been conceptualized that masculinity and feminity are bipolar ends of a single dimension. More recently, however, psychologists have been investigating the concept of psychological androgeny. *Psychological androgeny* is a term that refers to the integration of both masculine and feminine traits within an individual (Bem, 1974; Bozin and Freeman, 1974; Pleck, 1975). Androgeny implies that is is possible for a person to be both "assertive and compassionate, both instrumental and expressive, both masculine and feminine, depending upon the situational appropriateness" (Bem, 1974). A person who is androgenous may blend the complementary male and female traits in a single act, *e.g.*, "to fire an employee, traditionally a male trait but with sensitivity for the human emotion that feeling a person generally produces, traditionally a female trait" (Bem, 1974).

Persons who view themselves as androgenous have been found to show greater maturity in moral judgments (Block, 1973). Androgenous subjects have also been rated as having a higher level of self-esteem (Spence, *et al.*, 1975) than subjects who have rated themselves as primarily masculine or feminine.

An instrument commonly used to define subjects as masculine, feminine, or androgenous on the basis of self-ratings is the Bem Sex-Role Inventory

(BSRI). The BSRI results in four scores: masculine, feminine, androgenous, and undifferentiated. Androgenous refers to a score which is high masculine and high feminine; undifferentiated is low masculine and low feminine score.

Briefly, the BSRI contains both a masculine scale and a feminine scale. Each scale has 20 items related to masculine and feminine personality characteristics. These characteristics have all been judged to be significantly more desirable for one sex than for the other. All of the characteristics are positive in tone (*e.g.*, independent, forceful, affectionate, compassionate, etc.). When taking a BSRI, the subject is asked to rate himself or herself on a seven point scale on each of the 20 masculine and 20 feminine personality characteristics.

PURPOSE

The purpose of this study was to examine the relationship between special education labels and race, and student and teacher perception on scores of the Modified Bem Sex Role Inventory.

Since the literature suggests that subjects who classify themselves as androgenous hold themselves in high esteem, it may well be worthwhile to see if children having negative educational and racial labels perceive themselves differently than children who do not carry these labels. Further, since teachers may be influential in shaping children's self-concept, it may be important to find out whether a teacher's perception of a student matches the student's perception of himself.

METHOD

Subjects

The subjects used in this preliminary study were 16 male Mexican-American students and 16 Anglo students, who had been categorized as emotionally handicapped, as well as 16 Mexican-American and 16 Anglo regular educational students. The students were 10, 11, or 12 years old. The students were enrolled in several metropolitan Phoenix districts.

Procedure

The procedure used in this preliminary study was to administer the Bem Sex Role Inventory to the teacher before administering it to the student. The teacher was asked to rate a student on his/her perception of the student. Students were then asked to rate themselves. In all but two sessions, the student was administered the Bem by a trained experimenter. Neither the teachers nor the students were allowed to view each other's responses during the course of data collection.

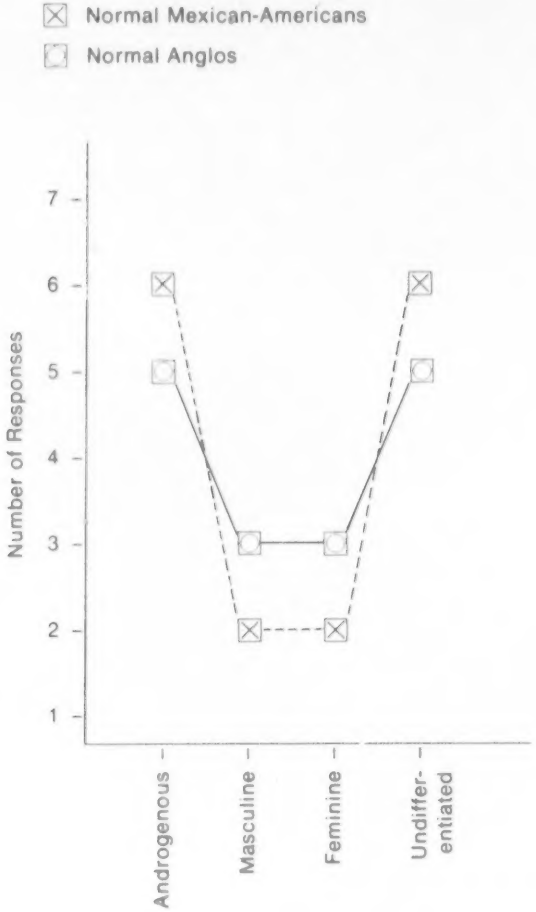
RESULTS AND DISCUSSION

According to Bem (1975), subjects who perceive themselves as androgenous have a high self-esteem. Undifferentiated subjects, however, have a low self-esteem. Masculine and feminine classifications result in scores of self-esteem somewhere between the androgenous and undifferentiated.

However, Sex roles, however, are learned behavior. It is possible that a classification of undifferentiated merely indicates that the "self" and therefore self-esteem has not yet been established. A sensitivity and self-perception develops with age and experience.

When grasping the results of the normal Anglo and normal Mexican-American student, it can be seen that cultural differences are minimal. The majority of the children view themselves as androgenous or undifferentiated. Few of the children perceived themselves as masculine or feminine. Approximately one-third of the children have classified themselves as undifferentiated. This finding suggests that these normal subjects have yet to develop a sense of self. Given the ages of the subjects—10, 11, and 12 years—this is consistent with the literature. These ages are the times during which identity formation is developing (See Figure 1).

FIGURE 1
Responses of Normal Students

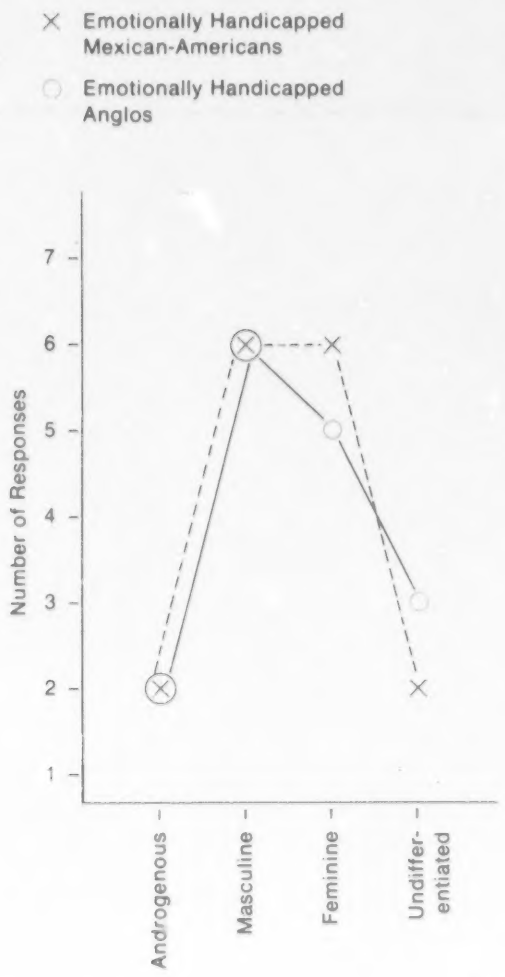


When viewing the results of the EH students, again cultural influence is minimal. In this case the majority of the children have classified themselves as either masculine or feminine. Very few of the children classified themselves as androgenous or undifferentiated (two Anglos, two Mexican-American as androgenous; two Mexican-American, three Anglos as undifferentiated) (See Figure 2).

These preliminary findings suggest that the EH students tend to strongly identify with either masculine or feminine traits. It is as if the world is classified into black and white.

One of the clinical observations of EH children is that they stop learning at the point of the introduction of the emotional disturbance. This ob-

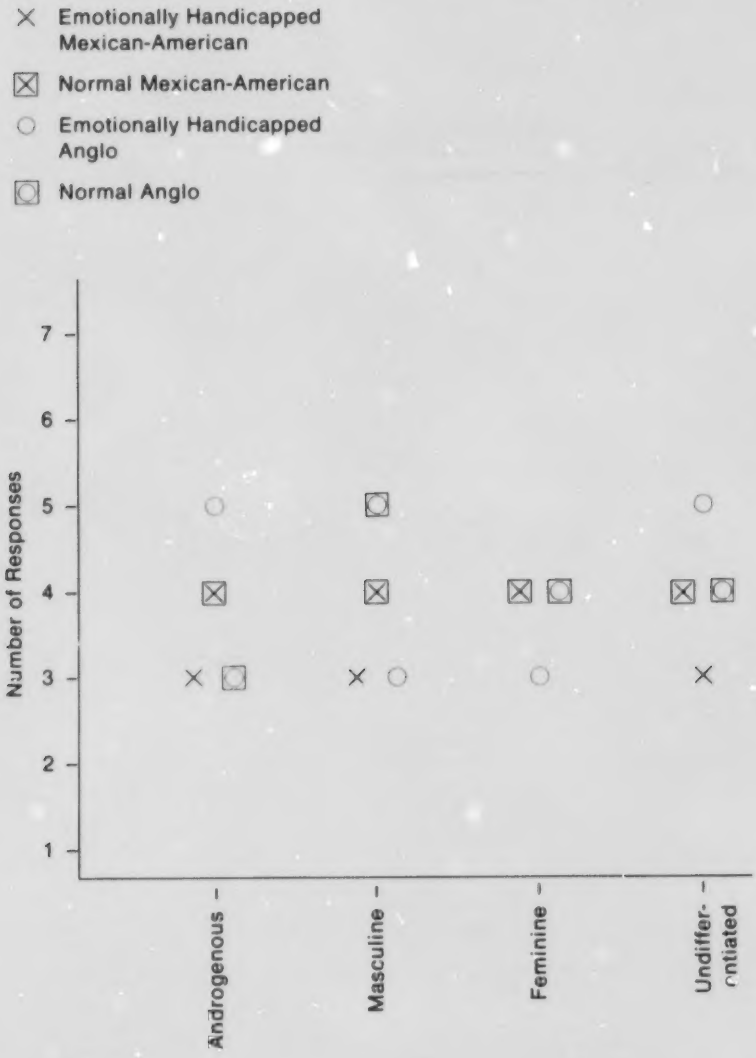
FIGURE 2
Responses of Emotionally Handicapped Students



servation can often be seen in academics. It is also probable that learning in terms of social behavior is also stunted. Behaviors tolerated in younger children will not be tolerated in older ones.

The possibility that the intermediate level EH student views the world in "either/or" terms can put him into conflict with societal age level expectations. If this "either/or" phenomena is a characteristic of the EH student, teachers need to take remedial measures in terms of the process of identity formation.

FIGURE 3
Teacher Perception



In fact, when teachers rate their students, both EH and normal, the teachers' perceptions are not matched with either group of children. Again, cultural lines do not discriminate, but in the case of teacher perception, neither do special classifications.

With the exception of the feminine trait scale of EH Mexican-Americans, the teachers' ratings were equivalent across the four classifications. The teachers appeared to perceive a wider range of personality types among the students. This may be a function of maturity, in that the teachers could make finer or more discrete judgments than the students (See Figure 3).

SUMMARY

The preliminary findings of the investigation suggest that:

1. Cultural labels may not influence self-perception.
2. Special education labels differentiated groups in terms of self-perception.
3. Teachers' perceptions of both EH and normal intermediate level students may not match the students' self-perception.

Results of this preliminary investigation support continued research in this area. Given a larger sample size, additional investigation will be applied to the data through a multiple regression analysis (Kerliger, 1973).

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NORMATIVE BEHAVIORAL OBSERVATION DATA AS A STANDARD IN CLASSROOM TREATMENT OF EDUCATIONALLY HANDICAPPED CHILDREN

Steven R. Forness

ABSTRACT

Although marked discrepancy between a child's behavior and that of his or her classmates is often a reason for initiating treatment, little empirical data is available upon which to base such a decision. Observations of 220 children in 19 classes for the educationally handicapped were made over several days to provide a tentative normative standard for such classrooms. Means and standard deviations were examined in four categories, along with teacher and peer responses to each type of behavior. Relatively low frequencies of disruption were found along with relatively high levels of teacher attention to on-task behaviors.

Discrepancy between a child's behavior and that of his or her classmates has frequently been cited as a reason why teachers either refer the child for treatment or initiate interventions designed to change the child's behavior in the classroom setting (Bolstad and Johnson, 1977; Forness and Esveldt, 1974; Nelson, 1971; Patterson, Cobb, and Ray, 1972). Although direct observation is then used to establish a baseline frequency of problem behavior, and to evaluate effects of treatment (Forness, 1970; Strain, Cooke, and Apolloni, 1976), systematic consideration is rarely given to a child's behavior relative to other children in the classroom. Only recently have investigators begun to employ a system of sampling the behavior of peers as a method of evaluating classroom intervention procedures (Patterson, 1974; Walker, Hops, and Johnson, 1975; Walker and Hops, 1976).

It has been suggested that normative data on peers is critical both in monitoring change in a particular child's behavior, as well as in deciding the "normal" limits of behavior for a given classroom setting (Forness, 1975); Greenwood, Walker, and Hops, in press; Walker and Hops; 1976). While a few investigators have observed behavior of children in regular classrooms in this regard (Bryan, 1974; Forness and Esveldt, 1975 a and b; Gottman, 1977; Nelson, 1971; Richey and McKinney, 1978; Werry and Quay, 1969), relatively little data is available on observable behavior of children in special class settings, despite the fact that children in these settings

continue to require treatment for behavior problems (Barr and McDowell, 1972; Fink, 1972; Haubrich and Shores, 1976). As has been suggested in other areas of assessment (Gunzburg, 1973; Mercer and Lewis, 1977), it is often helpful to have a frame of reference which also includes normative data for "special" populations.

The present study describes expected levels of observable classroom behavior for children in a relatively representative sample of classes for the educationally handicapped. These classes contain both learning disabled and emotionally disturbed children and represent the special class placement most commonly used in California for children with behavioral problems (Hansen, 1970; Keogh, Tchir, and Windeguth-Behn; 1974). The observation technique used was developed from previous work on classroom intervention (*c.f.*, Forness, 1975), and includes behavioral categories relevant to intervention procedures, such as off-task behavior and classroom disruption. The technique has also been used to describe behavior of educationally handicapped children in regular elementary classroom settings (Forness and Esveldt, 1974, 1975a), and to identify young children at risk for subsequent educational handicaps (Forness and Esveldt, 1975b; Forness, Guthrie, and Nihira, 1975; Forness, Guthrie, and Hall, 1976; Forness, Hall, and Guthrie, 1977).

METHOD

Participants and Settings

There were 220 children observed in 19 classrooms for the educationally handicapped selected from among three different counties in Southern California. These children represented 1.2 percent of all children the same age enrolled in such classes in California. School districts represented as closely as possible the demographic mix in large and small districts, urban and suburban communities. Specific breakdown, however, was unavailable on ethnic minority variables.

Class size ranged from nine to 14 with a mean of 11.5 children per classroom (S.D. = 1.9). Age of the children ranged from eight to 13 with a mean of 10.7 (S.D. = 1.4). Seventy percent of the samples were males. All participants were observed while enrolled in educationally handicapped classes during the spring of 1977. As indicated above, all had been referred to these classrooms because of learning disabilities and/or behavior problems in the regular class.

Observation System

Behaviors were recorded in four categories: *Verbal interaction*—defined as task-oriented verbal or gestural attempts to communicate, such as asking questions, reciting, or raising hand; *on-task behavior*—defined as eye contact to teacher, task materials, or peer who is reciting; *off-task behavior*—defined as eye contact to other than above; and *disruptiveness*—defined as behavior incompatible with on task activities, such as talking to peers when not permitted, speaking out of turn, throwing objects, verbal or physical aggression, etc. Categories were treated as mutually exclusive, *i.e.*, only one could apply during an interval.

Behaviors were also recorded under one of three conditions. If the teacher or a peer happened to be attending or responding directly to the child during the interval, the behavior was recorded under *teacher response* or *peer response*; otherwise, behavior was recorded under *no response*.

A time-sampling procedure was used involving six-second intervals marked off with red tape on a stop watch attached to the observer's clipboard. All children in each classroom were observed in round-robin fashion according to their order of appearance on the data sheet. During each six-second interval, the observer located the next child on the sheet, observed long enough to form a mental image of the behavior, placed a tally by the appropriate behavior under the corresponding response condition, and went on to the next child on the sheet. Observations continued until 10 rounds had been made on the classroom for the daily observation period.

Six different observers were trained in two group sessions lasting a total of six hours. Both paper and pencil reliability exercises and simulation conditions were used. Particular emphasis was placed on problems of reliability and observer bias (Mash and McElwee, 1974; Taplin and Reid, 1973; Wahler and Leske, 1973). Observer reliability was checked by two observation supervisors previously trained to criterion over several sessions by the author. Reliability checks were made during the first two weeks of data collection. Supervisors recorded data simultaneously with each observer on the same group of children. Reliability coefficients were computed by dividing agreements by the total of agreements plus disagreements. These averaged .89 with a range of .83 to .98 for all observers.

Procedures

All classrooms were observed, as much as possible, during the morning hours at a time when all children were either functioning as a group or were at least engaged in a similar type of activity, such as seatwork. Before observations were begun, each observer spent at least one day in the classroom learning children's names from a seating chart, becoming accustomed to classroom routines, and doing a brief "practice round" of observations which was not counted in the data. This allowed time for the children and teacher to get used to the observer's presence, as suggested by Masling and Stern (1964).

An observer continued observing an assigned classroom until that particular classroom had been observed a minimum of four days, a period suggested as necessary for a stable measure of children's classroom behavior (Forness and Guthrie, 1977). Although all children were observed for the same amount of time each day, they were observed for varying number of days so their individual totals in each category were converted to percentages.

RESULTS

Mean percentages of behavior in each category and response condition are presented in Tabie 1, along with standard deviations. Subjects engaged in appropriate classroom behavior, the total of verbal interactions
96 plus on-task behavior, 82.8 percent of the time (S.D. = 14.3 percent), rang-

TABLE 1
Mean Percent of Behavior Observed Under Three Response Conditions

	No Response Mean (S.D.)	Teacher Response Mean (S.D.)	Peer Response Mean (S.D.)	Total Mean (S.D.)
Verbal interaction	1.6 (3.4)	9.9 (10.6)	1.9 (4.2)	13.4 (12.0)
On-task behavior	63.4 (18.3)	3.6 (4.5)	2.4 (5.0)	69.4 (16.2)
Off-task behavior	11.5 (10.8)	0.4 (1.5)	1.5 (3.1)	13.4 (11.9)
Disruptiveness	1.8 (3.8)	0.8 (2.1)	1.1 (2.8)	3.7 (6.4)
Total	78.3 (13.8)	14.7 (11.5)	6.9 (7.3)	100.0

ing from 21 to 100 percent. The level of disruptiveness ranged from 0 to 47 percent. The mean time which teachers were observed in response to children's total appropriate behavior was 13.7 percent (S.D. = 11.4), ranging from 0 to 60 percent. For peers, this same figure was 4.3 percent (S.D. = 6.8), ranging from 0 to 50 percent. For total inappropriate behaviors, the response ranged from 0 to 23 percent for teachers and from 0 to 24 percent for peers.

The only significant sex difference was that boys were more disruptive than girls under the "no-response" condition (unpaired t test with unequal variance, $t = -2.83$, $p < .01$); but the actual percent difference was negligible. There were not apparent relationships between total appropriate behavior and class size nor between this behavior and age (*rho* = .04 and −.14, respectively).

DISCUSSION

The findings seem to suggest that any child whose percentage of appropriate behavior (verbal interaction plus on-task) falls much below 70 percent begins to be at risk for behavior problems. It is when that level begins to reach 50 percent that intervention would seem warranted. Depending on the case, figures on disruptive behavior may be more to the point. A child whose disruptiveness is over 10 percent becomes at risk, and any child much over 15 percent becomes a candidate for intervention. Some caution should be used here, however, since the disruptive category provides no distinction between behaviors of high intensity but low frequency, *e.g.*, aggressive or assaultive behavior, and disruptions which are seen as less immediately troublesome (Geston, Cowen, DeStefano, and Gallagher, 1978). These figures are of course, limited to educationally handicapped classes as defined herein.

How these figures are used from classroom to classroom with individual educationally handicapped children is another matter. There were some classrooms in the sample where literally no children were even in the "at risk" range and one classroom where *two* of the 10 children appear to

need immediate intervention. The question of treatment is always a relative one; but normative data in this case might assist a teacher, for example, in pressing his or her case for additional help in the classroom or referral for treatment. Effectiveness of subsequent treatment or intervention could then be given additional credence, beyond the child's improvement over his or her own baseline, whenever levels of appropriate behavior begin to rise substantially above 70 percent.

Another monitoring point could be levels of teacher or peer response. For example, whenever a child appears to receive attention more than 10 percent of the time from peers for inappropriate behavior, contingent use of peer attention and ignoring (*c.f.*, Patterson, 1974) might be seen as the treatment of choice. Unfortunately, these data do not seem to be particularly useful for identifying socially isolated children (Gottman, 1977; Greenwood, Walker, and Hops, in press) since no peer response at all still appears to be in the normal range. It is interesting to note the apparently effective distribution of teacher attention in which teachers appear to respond 10 times more often to appropriate behavior than they do to inappropriate behavior.

Another interesting finding is that previous research with the same observation technique (Forness and Esveldt, 1974a) indicates that young educationally handicapped children undergoing referral for special classes, while still in the *regular* classroom, were more than 10 percent below children in the present sample in levels of appropriate behavior. An unexpected finding is that levels of children's appropriate behavior in educationally handicapped classrooms tend to equal that found for normal children in regular classrooms (Forness and Esveldt, 1974; Forness, Guthrie, and Nihira, 1975). Whether these two findings can be considered a testimonial to special class placement is purely conjecture. The use of normative observation data does appear, however, to bring an additional perspective to behavioral treatment of children in special classroom settings.

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ENHANCING THE PROSOCIAL BEHAVIOR OF SEVERELY BEHAVIOR DISORDERED CHILDREN[1]

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The literature suggests positive reciprocal social behavior is crucial to children's development (Ainsworth, 1970; Blurton Jones, 1972; Schaffer, 1971; Piaget, 1954; 1963; Prescott, 1938; Strain and Shores, 1977a, 1977b). However, the specific responses which have a high probability of gaining and sustaining social interaction are currently unknown (Strain and Carr, 1975; Strain, Cooke and Appolloni, 1976). It would seem logical that appropriate language is central to reciprocity (Hester & Hendrickson, 1977; Strain, *et al.*, 1976; Strain, *et al.*, 1977). Other less apparent behaviors such as smiling, sharing and positive physical contact are also likely to be critical to reciprocal interaction (Cooke and Appolloni, 1976). Although naturalistic observation research has investigated social interaction (Hartup and Coates, 1967; Charlesworth and Hartup, 1967; Hartup, 1978), as Strain and Carr (1975) have noted, these studies have only begun to identify the specific responses which lead to reciprocal interaction. One possible explanation for the limited information on specific reciprocal responses is that observational studies have described interactions statistically as being reciprocal without direct assessment of the function of the interactions.

For teaching strategies to be effective in teaching children to interact research is required to identify the response patternsn that consistently set the occasion for positive reciprocal interaction. The purpose of the proposed and ongoing research is to identify reciprocal prosocial response patterns of young children. It is further contended that educational procedures and teaching tactics which have proven validity in teaching social behaviors need to be developed and refined. The Social Competence Intervention Project (SCIP) is designed to address these issues. Its major goals are presented below followed by a description of initial research activities currently being conducted. The goals are:

1. to identify reciprocal behaviors of preschool children (ages three through five years) through direct observation research tactics (year 1 activities);

2. to verify the function of these response patterns through a series of experimental studies (year 1.5 and 2 activities);

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3. to develop and refine teaching procedures which have been experimentally determined to be effective in developing appropriate social behavior (particular attention will be given here to programming for generalized behavior outcomes) (year 2); and

4. based upon data obtained from activities 1–3, to develop, evaluate, and disseminate teacher-training packages aimed specifically at: (a) instructing age-peers to intervene on the social behavior of withdrawn peers; and (b) developing basic motor and vocal responses associated with reciprocal interaction in children with extremely limited behavioral repertoires.

APPROACH

To accomplish these goals, research strategies that include direct naturalistic observations which will lead to the identification of reciprocal behaviors and a series of experimental studies to verify the function of these response patterns are proposed. Based on the results of these investigations, an additional series of experiments will be conducted to refine the teaching procedures that may be used to aid in the development of appropriate social behavior.

What follows are brief descriptions of research studies proposed in the SCPI and preliminary findings of the first naturalistic observational and experimental manipulative study.

To accomplish the first goal, that is, identify reciprocal behaviors of preschool children, a series of naturalistic observational investigations are being conducted. As noted, our primary purpose is to identify behavior topographies emitted by preschool children (ages three to five years) that have a high probability of setting the occasion for positive social behavior by peers.

The second goal, to verify the function of the response patterns observed during the naturalistic studies, will include several experimental manipulative investigations. These initial studies will be designed to determine the *effects of peer social initiations* on the behavior of withdrawn preschool children. This research will examine the functional effects of the three most effective social initiation behaviors (*i.e.*, those identified as most likely to be followed by a positive peer response in the observational study) on the social responding behaviors of withdrawn preschool children 36 to 48 months of age. The subjects will be selected on the basis of prebaseline observations that suggest that they rarely engage in positive interaction with peers. The training will be replicated at several sites with children with varying degrees of low interactive behavior participating. All studies will include training and generalization sessions.

The next studies will focus on the *effects of peer social consequences* on the initiations of withdrawn preschool handicapped children. In the first studies the primary purpose is to examine the functional effects of social initiations on handicapped children. The purpose of these studies is to further the study of reciprocal interaction by examining the effects of the peer's consequent responses to initiations (although possibly promoted by the teacher during training) by withdrawn children three to five

years of age. The major question confronted by this study is, "Do the three most often used responses (as defined in Study 1 of Goal 1) to peer initiations serve as reinforcers to specified initiation of social interaction by severely withdrawn children?"

The final studies to be conducted in relation to the second goal will be directed at *developing social interaction responses* of children with extremely limited behavioral repertoires. The proposed studies will further investigate the functional effects of the specified responses identified in the direct observational research when the subjects are children with extremely limited repertoires (*i.e.*, when the subjects never engage in the responses), and begin research on developing appropriate teaching strategies for teaching such children basic social skills.

The third goal of the SCIP, to develop and refine empirically validated teaching procedures, will be accomplished by conducting two strands of research. In the first studies, the effects of systematic intervention and fading procedures on the maintenance and development of withdrawn preschool children's social behavior will be investigated. These proposed investigations are designed to further test the generality of effects of adult prompts and contingent attention of social interaction among behaviorally disordered preschool children through systematic replication across subjects and to examine the effects of systematic fading of adult prompts and contingent attention on the maintenance of reciprocal child-to-child social interaction.

In the second series, tactics for teaching children with extremely limited social repertoires will be developed and their effects determined. Currently the primary mode of instructing children with extremely limited repertoires to respond to the appropriate social stimuli in their environment with appropriate behavior has been the use of imitation training procedures. These tactics are simple and require only that the child imitate an adult. The purpose of the second studies is to further clarify the teaching tactics and the relationship between the development of appropriate interaction skills and the utilization of these skills in a free-play period.

Consonant with the overall goals of this project the purpose of the fourth goal is to develop, evaluate, and disseminate modularized teacher-training packages aimed specifically at: (a) instructing age-peers to intervene on the social behavior of withdrawn children; and (b) developing basic motor and social responses associated with social interactions of children with extremely limited behavioral repertoires. In order to insure that an empirical approach is employed, the instructional development activities of this project will be based directly on the results of the first three goals. The activities of the fourth goal will be completed in three major stages: (a) exploration and analysis of existing social behavior training materials such as those developed at the Center at Oregon for Research on Behavior Education on the Handicapped (CORBEH), (*e.g.*, Greenwood, Delquadri, Hops, and Walker, 1974), (b) preparation and formative evaluation of training modules for developing social behaviors of handicapped children, and (c) field testing, refinement and dissemination of the training modules.

In addition to field testing each teacher training module, major field test and dissemination efforts will be conducted. The purposes of the major

field test are to: (a) evaluate the effectiveness of the training modules when used under conditions which closely approximate the conditions for which they will be designed following dissemination, and (b) to evaluate the replicability of the modules across differing instructional settings.

STUDY 1: NATURALISTIC OBSERVATION PRESCHOOLERS SOCIAL INTERACTIONS

As stated previously the purpose of the first naturalistic observation study was to identify social behaviors of preschool children, which, with a high probability, set the occasion for positive interaction with peers. Several investigators have found that many positive social behaviors emitted by preschool children are followed by positive behaviors on the part of peers (*e.g.*, Charlesworth and Hartup, 1967; Greenwood, Walker, Todd, and Hops, 1976). For the purposes of identifying specific social behaviors that might serve as target responses for improving the social repertoire of withdrawn children, however, the previously conducted research is not adequate. Initially, the studies by Hartup and his colleagues did not employ continuous or dyadic recording procedures, thus obviating the measurement of iniator-responder units of behavior. Although Greenwood *et al.* (1976) have answered this criticism in their research, the behavior coding system employed did not separate positive and negative forms of interaction. Likewise, discrete social behaviors were collapsed into a general category of social interaction.

In the naturalistic study outlined below, the major strengths of the observational systems developed by Charlesworth and Hartup (1967), Greenwood *et al.*, (1976) and Strain *et al.* (1976) are combined to yield a continuous recording system, measuring initiator-responder units in terms of discrete social behaviors.

In this present study, social initiations of preschool children between the ages of 36 to 66 months are being investigated. Twenty-three-year olds, twenty-four-year olds and twenty five-year olds from 17 day-care centers and nurseries throughout Nashville, Tennessee are being observed. Final subject selection included a heterogenous group of children along the dimensions of SES, race and sex. Children identified by their teachers as being relatively high interactors are being observed during free-play periods in which there is minimal teacher involvement.

An observation system which measures social behavior in terms of initiator-responder units is being employed. Twelve target initiation behaviors and two basic peer responses are being observed. On each of 10 observation days per target child, positive social initiations are recorded across six consecutive minutes. The 10 observation days, distributed over a three-month period, will yield 60 minutes of data on each of the 60 children. Observations are being done both indoors and outdoors during designated free-play periods. Recording is begun one minute after the signal for free play is given. Only interactions in which the target child is the initiator are recorded. The frequency the subjects emit particular target behaviors is being assessed and peer responses to these initiations are also being observed.

The behaviors being observed were selected based on a review of the literature and preliminary observations. They are divided into two major categories: (a) vocal/verbal and (b) motor/gestural. They include:

I. Vocal/Verbal Behaviors

A. **Statement**—the target child's vocalization to a peer is a neutral declaration (*e.g.*, "My car is red."). Statements were included because of their high rate of occurrence within the age range to be studied. Neutral declarations may serve a limited function in securing positive interaction.

B. **Command**—the target child orders or directs other children in order to receive an object, information, or to begin or terminate some activity. Commands have been included because children who control situations are generally seen as the dominant or popular children (Chance and Larsen, 1976; Blurton Jones, 1972).

C. **Question**—the target child asks for object, permission, or information from peers. Questions, like statements, may serve a limited function in securing interaction with peers. They have been included, nonetheless, because they are generally prosocial in nature.

D. **Vocal Attention**—the target child attempts to direct the attention of peers (*e.g.*, "Look at this."). Vocal attention can be seen as a subset of commands having a specific function. They call attention to self or events in the environment.

E. **Play Organizer**—the target child specifies an activity, role or other play for peers and/or maintains such ongoing activity (*e.g.*, "Let's play house.").

F. **Vocal Imitation**—the target child imitates the novel vocalization of a peer within three seconds of the peer's utterance. Imitation has been the topic of considerable investigation. Some suggest that it serves a very useful purpose in eliciting responses from peers (Apolloni and Cooke, 1978). Abramovitch and Grusic (1978) report a higher incidence of verbal imitation than motor imitation.

II. Motor/Gestural Behaviors

A. **Attention Seeking**—the target child's motor behavior calls the attention of other child(ren) (*e.g.*, "showing off."). Novel behavior that occurs in the absence of apparent external stimulus. Attention seeking here is seen as the inverse of imitation. The behavior that is typically imitated.

B. **Imitation**—"matching to sample behavior" withing three seconds of a peer's novel motor behavior (from Abramovitch and Grusic, 1978).

C. **Share**—the target child offers or exchanges an object with a peer, or both cooperate in the use of one object. As children's interactions typically involve objects (Bronson, 1974; Lewis and Rosenblum, 1975) the sharing of these objects seems highly likely to result in positive interaction.

D. **Assistance**—the target child provides help to another child; includes pulling another child up from the floor, boosting or supporting a peer.

E. **Affection**—the target child's contacts with a peer that includes pats, hugs, holding hands or other forms of physical affection. Assistance and affection are included because of their face validity—like sharing, they imply cooperation.

F. **Rough and Tumble Play**—the target child's behavior includes topographically aggressive behavior accompanied by positive affect. Rough and tumble play comes from the work of ethologists (Blurton Jones, 1972; Connolly and Smith, 1972; and McGrew, 1972). These investigators speculate that it serves to "use up" a child's aggressiveness. Blurton Jones (1972) found a negative correlation between behavior scored as aggressive and behavior scored as rough and tumble.

Although the data are not all collected at this time, preliminary analyses have been conducted. The results of these analyses must be considered tentative, however, several interesting outcomes have been noted. When the twelve target behaviors are rank ordered by age, the five behaviors most often displayed by three, four and five year olds are relatively consistent. The behaviors include: statements, attention seeking, commands, statements, attention seeking, commands, vocal attention and shares for threes; statements, commands, questions, vocal attention and attention seeking for four year olds; and, statements, commands, vocal attention, questions and play organizers for five year olds. The behaviors that have the highest probability of being followed by a positive peer response differ somewhat from the behaviors most frequently exhibited. Generally speaking, play organizers, shares, assistance, rough and tumble play, questions and commands were most successful in evoking positive behavior from a peer across all ages. In the vocal/verbal category, play organizers have the highest success rate, and in the motor gestural category, shares and rough and tumble play are the most successful. At this point, our observations indicate that there is no clear difference in rate of initiations (interactions) between indoor and outdoor play.

STUDY 2: PEER-MEDIATED TRAINING OF SEVERELY WITHDRAWN CHILDREN

A preliminary experimental manipulative study has also been conducted primarily to replicate and extend the findings of an earlier investigation which indicated utility of selecting target behaviors on the basis of their consistently setting the occasion for positive responses in the subject's natural environment (Gable, Hendrickson, and Strain, 1978). A secondary purpose of the study was to design and apply a replicable training procedure that would allow relatively minute examination of initial learning and generalized responding.

In this study, training procedures adapted from the Project MORE (Lent and McLean, 1976) daily-living skills curriculum were used to establish social interactive behavior among preschoolers with severe behavior dis-

orders and non-handicapped peers. Generalization of those behaviors beyond the training setting was also investigated. Assessment of social behavior during training and free play were based on Project MORE's data collection system and a system allowed us to study the level of trainer/peer assistance required to evoke the behavior during training and to record whether behaviors were vocal/verbal or motor/gestural and as consisting of initiated or responded units.

This second study was conducted at the Regional Intervention Program (RIP), a data-based, parent-implemented early intervention project in Nashville, Tennessee. The four children who participated ranged in age from two to four years. The target subjects were children selected for exhibiting minimal levels of interaction with peers during free play activities, that is, on the basis of their comparatively low rate of positive behavior. Peers were selected on their comparatively high level of positive peer interaction.

A single subject multiple baseline was used (Sidman, 1960). Interactive behavior of two dyads of children (one delayed and one nondelayed child per dyad) were trained in each of two conditions. Two types of interactive responses were taught to each dyad, one response/condition. Each response was an activity common to any preschool setting.

Initially, a number of potential social behaviors were observed during free play when all children in the classroom were present. During this prebaseline phase the frequency at which various behaviors were employed and the consistency with which they led to predictable positive responses from peers was observed. Block stacking, ball rolling, and blowing bubbles, for example, were initial responses observed. Finally, based on the prebaseline assessment two responses were selected: (1) getting into a wagon and being pulled and, (2) passing a ring to a partner who then stacked it. Data were collected daily during social behavior training sessions and during a free play generalization session.

The Project MORE teaching strategy was modified slightly for use with more than one subject and then applied in teaching each of the target behaviors. This teaching strategy consisted of applying consecutively greater amounts of trainer assistance. (The goal was to have the children performing the desired behaviors with no assistance.) At the *No Help* level, the children were simply instructed to "Play Together." If they did so within five seconds (appropriately with the provided materials), they were praised or provided some reinforcing consequence. If they did not play together reciprocally within five seconds, they were given *Verbal Help*, that is, told specifically what to do. "John, pass the ring to Sue. Sue, stack the ring." Each child was praised for correct responses. If they still did not perform the response, they were given a *Demonstration* or model. The trainer demonstrated the desire response for the children and the children were given an opportunity to imitate the modeled behavior. If the children still did not perform the response, they were given *Physical Help* or guided through the sequence of passing and stacking the ring.

Each day five training trials were presented and probes on untrained or previously trained responses taken. The training session lasted about 10 minutes. The free play session occurred from 23 to 24 hours after the training session. The children were allowed to play with whomever and

whatever they wanted. The materials available to the children were held constant. The session ran approximately 15 minutes following an initial instruction: "Children, it's time to play together."

Preliminary results of the second investigation which utilized severely withdrawn and non-handicapped children indicate that the modified Project MORE teaching strategy was effective for training social interactive behavior. Further, significant behavioral change was noted in both subjects during the generalization session conducted the following day. It should be noted that the generalized social behavior change observed relates to the *total* number of vocal/verbal and motor/gestural interactions emitted rather than simply to the two behaviors trained. Further, a significant increase in both the subjects and peers' interactive behavior was noted following training. These data support evidence that selection of target responses assessed to have a high probability of setting the occasion for positive reciprocation and the utilization of systematic prompting procedures may be effectively employed to promote both acquisition and generalized social responding among severely withdrawn and model preschool children.

The results of our first investigations indicate that certain social behaviors are indeed more likely to set the occasion for positive responding than other behaviors. Furthermore, it appears that including these as target behaviors when training social reciprocal responding may facilitate generalized usage of the trained behavior.

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A REVIEW OF LEARNING RESEARCH IN AUTISTIC CHILDREN

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ABSTRACT

A review of research dealing with selected aspects of learning is presented. Included are the variables of overselectivity, conditionability, memory, as well as other selected factors. Present studies are critiqued on the basis of absence of clear-cut variables for samples as well as generally not equating groups on MA.

Until quite recently research in autistic learning was almost nonexistent (Hintgen and Bryson, 1972). The major emphasis in the field involved identification, differential diagnosis, and etiology. The past decade, however, has seen an increased amount of interest in the study of the learning process in this group of children. The present paper deals with some of the more important trends in learning research with autistics, as well as a comparison of similarities and differences observed in retarded and normal groups. Specific emphasis is placed on the available studies dealing with the process of overselectivity, conditionability, memory, and a potpourri of other aspects of the learning process. Finally, a critique of past studies is offered with some suggestions for future research.

OVERSELECTIVITY

During the present decade, a number of researchers have been investigating the attentional deficits of severely disturbed children primarily using operant techniques. The results of these studies indicate that many of these children attend to environmental stimuli in a highly selective fashion. From a learning viewpoint the behavior of psychotic children comes under the control of very select stimuli. Since these highly select stimuli control responses, the more obvious stimuli usually controlling the child's behavior may, in fact, be totally ignored by the autistic child (*i.e.*, some minute detail may be actually controlling the response.) The implications of the behavioristic theory of selective attention may explain many of the difficulties encountered in the attempts to teach discrimination tasks to autistic children.

Lovaas, Schreibman, Koegel, and Rehm (1971) reported the results of the first study on stimulus overselectivity. This study used a discrimination learning task in which autistic, retarded, and normal children participated. All subjects received reinforcement for pressing a bar in the presence of a complex stimulus consisting of the simultaneous presentation of visual,

auditory, and tactile components. After the response to the complex stimulus was established, each of the specific sensory component cues was presented separately in order to assess which cue had acquired control over the child's response. It was found that autistic children characteristically responded to only one of the components, to the exclusion of the others. By contrast, normal children responded to all three components and retarded subjects responded to at least two.

In a second study, Lovaas and Schreibman (1971) narrowed the stimulus complex to just an auditory component (white noise) and a visual component (red floodlight). The two groups studied were classified as autistic and normal. The experimental procedure was essentially the same as in the original Lovaas, *et al.*, study. In the second study, each child was presented with auditory, visual, and a combination of auditory-visual stimuli. Results indicated that both groups were able to learn the task, with most autistic children requiring substantially longer time periods to master the task (a few minutes for the normals as compared with two days to six weeks for the autistic group.) In most instances, the normals responded only to the stimulus complex, while the autistic children showed stimulus overselectivity demonstrated by their differential response to one of the two stimulus components. It was interesting to note that the unused cue could become functional for the autistic children if specific training sessions were provided for the former nonfunctional cue. Of further interest, was the lack of evidence that one specific sensory modality was impaired in the autistic children or that they preferred a particular modality.

Further studies of the phenomenon of overselectivity generally confirm the hypothesis that autistic children tend to respond to only a sparse number of potentially relevant cues available in the learning situation. The range of experiments include studies that demonstrate overselectivity not only across sense modalities but within a single modality (Koegel and Wilhelm, 1973: Reynolds, Newsom, and Lovaas, 1974).

The 1973 study of Schreibman and Lovaas illustrated the extent to which severely autistic children responded to just a restricted number of possible cues. In this research autistic and normal children were trained to discriminate between girl and boy doll figures. Further examination of the cues determining responses in the autistic children revealed that this group responded only to a very specific aspect of the total visual cue. That is the autistics selected the doll on the basis of a single detail, *e.g.*, an article of clothing worn, rather than on the basis of responding to the entire doll, as was the case with the normal subjects.

Schreibman and Lovaas suggested that since the autistic group did not respond to the totality of the doll figure, then perhaps this lack of response implied that autistic children discriminated in the same basic manner in social situations. Autistic children may attend to some detail of a person's dress, and when that person appeared in different dress the child no longer recognized him due to loss of the necessary stimulus cue. Autistic children could be taught to discriminate the facial features of the boy and girl dolls, but this discrimination was maintained only for brief periods. The authors speculated that the human face may be too complex a

stimulus for the discrimination skills of the autistic child and recommended additional research with respect to this hypothesis.

Schreibman (1975) indicated that one of the implications of overselectivity in autistic children was the necessity to carefully consider the fact that in many learning situations, the subject was presented simultaneously a prompting cue, as well as the stimulus to be discriminated. This resulted in the autistic child being presented a rather complex stimulus to which he was required to respond. Schreibman designed a study to assess the effectiveness of an ordinary prompting technique such as pointing to or placing a light in front of the correct stimulus to be discriminated. This type of extra-stimulus prompt was to be compared with a within stimulus prompt such as intensifying the stimulus to be discriminated. Schreibman investigated prompting in visual discrimination learning of autistic children. The extra-stimulus cue consisted of pointing to the correct stimulus. The within-stimulus prompt consisted of an exaggeration of the relevant component of the training stimulus itself and therefore did not require the child to respond to multiple cues. The results showed that the children usually failed to learn the discrimination without any prompt. Further, the children always failed to learn a discrimination when an extra-stimulus prompt was used. Most importantly, the discrimination was achieved only when a within-stimulus prompt was used. Similar findings were reported as well by Schreibman for auditory discriminations involving within- or extra-stimulus prompts.

Schreibman's earlier findings were recently corroborated by Arick and Krug (1978) indicating that extra-stimulus prompts were relatively ineffective with autistic children as compared to within-stimulus prompts. The task used by these investigators involved matching ten differentially shaped symbols with randomly presented picture cards of noun labels. All of the subjects in the within-stimulus prompt condition reached criterion within 200 to 300 responses, whereas, the extra-stimulus group failed to reach criterion after a mean of 1,100 responses.

MEMORY

In a series of experiments on higher functioning autistic children, some of whom functioned in the normal range on nonverbal tests of intelligence, Hermelin and O'Connor (1970) reported on a number of the unusual characteristics of memory in this group. Generally speaking, meaning played a minimal role in memory processes. Autistic children tended to remember best what they heard last. Hermelin and Frith (1971) reported a rather representative finding within their high functioning autistic population. These authors studied verbal recall in autistic, normal, and retarded children. They found that the normal and retarded subjects showed significantly better recall of words in sentence form than did the autistics, and that the latter group frequently showed better recall of random strings of words. The authors found evidence of clustering during recall in retarded and normals, but not in autistic children. Further, the autistics demonstrated categorization deficits. In a test of rule-finding (remembering lists containing systematic repetitions), the retarded and normal subjects performed at a significantly higher level than did the autistics.

When quasi-random lists were presented the autistics performed at a higher level than did normal or retarded subjects. Hermelin and Frith concluded that there was clearly delineated cognitive pathology in autistic children, a state of affairs that interfered with normal learning and memory processes. One additional finding in an autistic group reported by Hermelin and O'Connor (1970) was that recall of words was more frequently dependent on the sound of the words rather than meaning or grammatical usage.

Based upon more recent research, Hermelin (1976) reported that autistic children functioning in the above IQ 50 range had unimpaired short-term memories. However, she added that "Much of the encoding and restructuring of information which apparently occurs normally in the short-term non-modality-specific, abstract memory store, may be absent in childhood autism" (p. 163). Rather these children tended to use an extended form of their uncoded immediate memory system.

A final note on memory of these children is provided by Kozloff (1973) who reported that four autistics had an unusual memory for songs—a finding frequently found in the clinical literature, but by no means universally reported.

CONDITIONABILITY

Churchill (1972, 1973, and 1978) has studied conditionability in autistic children in a most unique and ingenious fashion. Let us move directly to the conclusions, and then return to an examination of this investigator's novel research. Churchill concluded that the conditionability in low functioning members of the autistic group was highly variable. The common denominator was the extensive evidence of low-level conditionability, with the specific nature of the difficulty being extremely individualistic. He found low-functioning autistics conditionable to some point. No level of additional training experience, however, could overcome the barrier to advancing beyond that particular level.

To assess conditioning in autistic children, Churchill (1972) developed a nine-word experimental language. The basic nine-word language (9WL) contained three different parts of speech, including three objects (block, ring, and stick), three adjectives (red, yellow, and blue), and three verbs (give, tap, and slide). If the individual components were learned, the child received additional training on two-word phrases and basic grammar involving three-word sentences with a noun, adjective, and verb. Through the use of specific hand signs for each of the 9WL, the autistic's visual as well as auditory reception was evaluated. Thus the 9WL provided a way of evaluating the conditioning of receptive visual, receptive auditory, expressive vocal, and expressive motor modalities.

The subjects consisted principally of 13 autistic children classified by the use of the DeMyer, *et al*., (1971) system. Of the 13 children, five were higher functioning autistics (presumably on the basis of overall intellectual functioning). The eight low-functioning children experienced a wide variety of difficulty in the basic aspects of the 9WL. Churchill could identify individualized patterns of abilities and handicaps. While some exhibited specific modality impairments, others did not.

The five higher functioning children were able to learn the various components of the 9WL, but showed impairment in higher order tasks such as cross-referencing, manipulating syntactical structures, and handling prepositions.

The conclusion to be drawn from Churchill's work was that the conditioning of various aspects related to language development tended to be highly variable and highly individualistic. In addition, it was clear that lower-functioning autistics showed more problems in conditionability than higher functioning autistics. This finding points to the need to carefully consider the general characteristics of the population, including degree of intellectual impairment, when attempting to do research with autistics. Further discussion of the lack of control for intellectual factors is to be found later in this paper.

ADDITIONAL FINDINGS

Cowan, *et al.*, (1965) studied the discrimination of colors and shapes with 12 autistic children, only two of whom had any degree of language development. The tasks included selecting red objects from a multicolored array; likewise, the children had to select square objects from a tray rather than selecting circles or triangles. Only the two autistics with language development mastered the task. The remaining 10 children performed significantly below chance. Concerning their findings, Cowan, *et al.*, state "No hypotheses concerning loose thought associations or other perceptual or conceptual distortions of color and form can possibly explain the low number of correct choices given by most children. . . . The children *knew* the correct responses; they were able to emit them but did not do so on demand. This is negativism by definition" (p. 919).

Hermelin and O'Connor (1970) studied various aspects of discrimination learning in relatively bright autistics. They concluded that size was the easiest discrimination to be made by these subjects, as compared to shape and color discrimination.

Bryson (1970) in an investigation of matching-to-sample tasks involving visual, auditory, and fine motor components found that the area of most difficulty involved cross-modal tasks. Matching was used instead of discrimination because memory was not required and thus felt to be more effective. Bryson reported that auditory-to-visual and visual to vocal performances were extremely poor. She suggested that this may account for some of the observed language problems in many autistics. Further, Bryson failed to confirm the oft-reported clinical finding that autistic children have well developed fine motor skills.

Rutter (1978) reviewed a number of cognitive defects that need to be considered in terms of assessing learning potential in autistic children. The impairments noted by available research findings to date included verbal understanding, sequencing, abstracting, comprehending gestures, and written language. Rutter, furthermore, cited Hermelin's (1976) research pointing to the problems of temporal sequencing which were found to be substantially greater than spatial sequencing. Likewise, Rutter concluded that the observed disabilities were not restricted to any given

sensory modality. Finally, the observed evidence did not point to the presence of any significant degree of visuo-spatial defects in autistic children.

PRESENT STATUS

Based upon presently available research, there are at least two significant problems in drawing firm conclusions about the learning characteristics of autistic children. The first problem lies in the unsatisfactory job many investigators have done in specifying the nature of the population they are purporting to study. Too many of the studies have used the term autistic without further elaboration. At times, the authors have referred to the fact that the children were "carefully diagnosed" as autistic by a psychiatrist or psychologist. Since these professionals differ radically with respect to which children should or should not be included in such a group, it is not surprising to find that the subjects of various studies have been markedly dissimilar. As Rutter (1978) points out, there is a need to determine which particular symptoms are both universal and specific to the autistic group. Rutter suggests three general sets of symptoms including: (1) a profound and general failure to develop social relationships, (2) language retardation with impaired comprehension, echolalia, and pronominal reversal, and (3) ritualistic or compulsive phenomena as suggested by Kanner's term, "preservation of sameness."

Our own learning research with Dr. Paul Alberto and Dr. David Center, presently underway at Georgia State University is based upon classification of subjects using a series of observable and measurable behaviors. Thus, the autistic group clearly demonstrates known deficiencies unique to that group and not present in a comparison group of severely mentally retarded children. We are using a combination of teacher-rated behaviors, as well as direct observation. We are finding that we can reliably identify severely autistic children in this fashion. That is, we are only willing to accept into the autistic group children who exhibit unique and specific deficits not found in severely retarded subjects. Thus, in all instances we are using behavioral criteria for distinguishing between autistic and retarded children within a severely handicapped population. Of the eight behaviors we are using, we find that absence of maintaining eye contact for periods of three seconds or more and preservation of sameness (behaviorally defined[1]) are the most consistently occurring discriminanda within a sample of 20 autistic children found throughout the metropolitan Atlanta area.

A second criticism of much of the existing research involves the frequent lack of equating the groups on some measure of cognitive functioning. The consequence of not controlling for differences in intellectual functioning is to restrict the meaningfulness of conclusions drawn from much of the presently available research. As Rutter (1978) states, "Unfortunately, a large number of otherwise sound pieces of re-

[1] Preservation of sameness is defined as follows: (a) child is upset by minor changes in the environment, *e.g.*, changes in scheduling of daily activities, rearrangement of furniture, personnel changes; or (b) child adopts complicated rituals which make him very upset if not followed, *e.g.*, putting many dolls to bed in a certain order, taking exactly the same route between two places, dressing according to a precise pattern, or insisting that only certain words be used in a given situation. Child is rated by his teacher as either characteristically exhibiting or not exhibiting this phenomenon.

search are virtually uninterpretable because they fail to take mental age into account either in defining symptoms or in comparing groups" (p. 6). Not controlling or MA within autistic populations has fairly serious consequences. This is particularly cogent when we consider that children labelled as autistic have been classified as ranging in intelligence from above average (based primarily upon the English view) through the profoundly retarded level. The fact that a number of very low functioning or "untestable children" are sometimes thrown together in a sample which also includes subjects who are functioning at significantly higher levels is an unpardonable experimental error.

SUMMARY

The past decade has been characterized by more studies of the specific learning characteristics of groups of autistic children. However, because of the fact that researchers have generally not concerned themselves with operational definitions of subjects and likewise have not adequately controlled for differences in MA, the generalizations made to this point must be considered to be tentative.

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SEVERELY AND PROFOUNDLY DISTURBED CHILDREN: THE IEP AND THE LEAST RESTRICTIVE ALTERNATIVE

Ralph Cline and Eleanor Guetzloe

Children who are severely or profoundly disturbed—who may be labelled autistic or childhood schizophrenic—have always presented a myriad of problems to both teachers and administrators in special education. These problems have been compounded by the provisions of Public Law 94-142. Delivery of service to these children has become the responsibility of the public education system. The low prevalence of this disorder may preclude a separate class in small school districts, while the behaviors exhibited by the children make grouping with other children extremely difficult. Further, after years of participation in a school setting, they are likely to be candidates for institutional placement. The prognosis for the great majority of these children is poor.

Two provisions of Public Law 94-142, the Individualized Education Program (IEP) and placement in the Least Restrictive Environment, present particular challenges to the special educator who deals with severely disturbed children. Educational assessment of the severely and profoundly disturbed, upon which the IEP is based, is extremely difficult. While there is some agreement concerning effective management and treatment of such children, there is little historical support for a certain curriculum, a list of skills to be taught, or a method of choosing one objective as having priority over another. The law also calls for a continuum of services from placement with non-handicapped children through more restrictive situations to placement in an institution or a hospital. This continuum is difficult to implement in most school districts. The law further mandates that a child be placed as close to home as possible. These children are difficult to transport. Parent involvement with educational planning for the handicapped is a major mandate of the law. Parents may object to placement decisions by school personnel and such objections are guaranteed through due process procedures, including grievances concerning the school, the class, the distance transported, the teacher, or any other facet of the educational program.

To further complicate the situation, criteria for placement may differ considerably from district to district. There is little evidence to support any particular viewpoint concerning the nature of autism; the problem of classification is still unresolved; reports of incidence vary from study to study; the etiology is not yet clearly established; effects of various educational and treatment modes are not well substantiated; and the prognosis, while generally poor, is unclear.

CHARACTERISTICS OF THE AUTISTIC SYNDROME

There is some agreement concerning the characteristics of autism, which may be used as criteria for diagnosis and/or placement decisions.

The term "autism" was used by Leo Kanner (1943) to describe a rare and unique form of childhood psychosis. A major characteristic of children with *Kanner's Syndrome* was a pensive, totally absorbed facial expression, which was similar to that of a normal person who was daydreaming. Kanner suggested that this syndrome was marked by (a) an inability to relate to people and situations from the beginning of life, (b) failure to use language for communicative purposes, and (c) an anxiously obsessive desire for the maintenance of sameness. This condition was differentiated from mental deficiency by higher intellectual potential, and from childhood schizophrenia by the early age of onset.

A Working Party convened by Dr. E. M. Creak (1961), in an attempt to formulate criteria for diagnosis of what they termed "The Schizophrenic Syndrome in Childhood," listed the following nine points:

1. Gross and sustained impairment of emotional relationships with people.
2. Apparent unawareness of the child's own personal identity to a degree inappropriate to his age.
3. Pathological preoccupation with particular objects or certain characteristics of them, without regard to their accepted functions.
4. Sustained resistance to change in the environment and a striving to maintain or restore sameness.
5. Abnormal perceptual experience (in the absence of discernible organic abnormality), implied by excessive, diminished or unpredictable response to sensory stimuli, for example, visual and auditory avoidance—or insensitivity to pain or temperature.
6. Acute, excessive and seemingly illogical anxiety.
7. Speech may have been lost, or never acquired, or may have failed to develop beyond a level appropriate to an earlier stage.
8. Distortion in motility patterns, for example, excess as in hyperkinesis, immobility as in catatonia, bizarre postures or ritualistic mannerisms, such as rocking and spinning (themselves or objects).
9. A background of serious retardation in which islets of normal, near-normal, or exceptional intellectual function or skill may appear.

A current working definition of the syndrome of autism has been recently adopted by the National Society for Autistic Children (Ritvo and Freeman, 1977). The operational criteria, which may be used as a basis for identification, include the following:

1. Signs and symptoms manifested prior to 30 months of age.
2. Disturbances of sequences of motor, social-adaptive, and cognitive development.
3. Disturbances of responsiveness to sensory stimuli.
4. Disturbances of speech, language-cognition, and nonverbal communication.
5. Disturbances of capacity to relate to people, events, and objects.

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FEDERAL PROVISIONS FOR A FREE APPROPRIATE EDUCATION

Because of the severely debilitating nature of the disorder, autistic children were often excluded from public school programs, and were usually consigned for treatment and/or education to the medical and psychological professions.

As the result of recent federal legislation, delivery of service to these children is no longer debatable. Joseph Califano, Secretary of Health, Education and Welfare (HEW), issued regulations for implementation of Section 504 of Public Law 93-112 on April 29, 1977. On this occasion he made the following statement:

> For decades, handicapped Americans have been an oppressed and, all to often, a hidden minority, subjected to unconscionable discrimination, beset by demoralizing indignities, detoured out of the mainstream of American life and unable to secure their rightful role as full and independent citizens.
>
> Today I am issuing a regulation, pursuant to Section 504 of the Rehabilitation Act of 1973, that will open a new world of equal opportunity for more than 35 million handicapped Americans—the blind, the deaf, persons confined to wheelchairs, the mentally ill or retarded, and those with other handicaps.
>
> The 504 Regulation attacks the discrimination, the demeaning practices and the injustices that have afflicted the nation's handicapped citizens. It reflects the recognition of the Congress that most handicapped persons can lead proud and productive lives despite their disabilities. It will usher in a new era of equality for the handicapped individuals in which unfair barriers to self-sufficiency and decent treatment will begin to fall before the force of the law. (*The Rehabilitation Act*, 1977, p. vi)

The now familiar companion law, Public Law 94-142, includes provisions which are designed "(1) to assure that all handicapped children have available to them a free appropriate public education; (2) to assure that the rights of handicapped children and their parents are protected; (3) to assist States and localities to provide for the education of handicapped children; and (4) to assess and assure the effectiveness of efforts to educate such children." (*Federal Register*, 1977, p. 42474).

RATIONALE FOR GROUPING AND PLACEMENT

The low prevalence of this disorder generally precludes a self-contained class for autistic children in any but the largest school districts. Letter (1967) and Treffert (1970) have reported an incidence of approximately four children in 10,000 births. According to Rimland (in Eysenck, 1972), true autism apparently represents about 10 percent of the children "loosely called *autistic*" (p. 104), so a realistic estimate would be one autistic child per 25,000 births. Applying the funding formula used by the state of Florida, for example, a school district containing 150,000 children would be required in order to financially support a single, self-contained class of six autistic children.

Should autistic children be grouped together in a special class? On the other hand, should these children be moved into classes with other types of children? If so, into what type of class should they be inserted? The prospect of modeling should be enhanced if they are integrated with others

whose behavior more nearly approaches the norm; however, how accepting will the more normal child be of these children? What will be the reaction of the teacher?

Special class for autistic children. It has been suggested by O'Gorman (1970) that it is a mistake to maintain schools exclusively for autistic children. "They must have other children with whom they can learn to relate, so they must not be surrounded only by other autistic children. They will not attempt to communicate with other children who do not themselves communicate. One cannot learn to talk or listen to speech if there is nobody to talk to" (pp. 151–152). O'Gorman further suggests that these children will do best in units in which there are other kinds of mentally retarded or emotionally disturbed children, that schools for such children must have a high ratio of teachers to children, and that as soon as possible the children should be "cautiously and gradually" (p. 152) introduced into a normal school setting.

Integration with normal children. According to Lovatt (1962), autistic children have been integrated in regular nursery school classes with some measure of success. The characteristics of the disorder, however, ensure that these children would be difficult to educate in a regular classroom setting.

Manifestations of the autistic syndrome may include the most extreme forms of bizarre, sterotyped, self-injurious, self-stimulating, and repetitive behaviors, which may be frightening to many normal youngsters. At best, it should be noted that these behaviors would be highly disruptive in a regular classroom.

Placement with retarded children. Although the results of recent research indicate that approximately 60 percent of the children identified as autistic achieve intelligence list scores of below 50 (Ritvo and Freeman, 1977), placement in a classroom with trainable retarded children may be resisted by the parents. In fact, some parents may oppose the placement of their autistic child even on the same campus with children classified as retarded.

Parent involvement. Involvement of parents in the educational process should not constitute a problem to professionals in exceptional student education. Our experience has been that they are an active, lucid and interested group sophisticated in identification, placement, and management procedures, becoming somewhat militant, particularly with the leverage afforded by Public Law 94-142, concerning educational issues that affect their children. Such parents may become highly critical of programs that they perceive as inappropriate for an autistic child. These parents may often present a threat to administrators as well as to teachers who are not adequately trained. In our opinion, many parental decisions regarding placement may be influenced by self-serving and self-protecting attitudes. Parents may be more reluctant to accept their role as parents of a retarded child than they are of the status as parents of a child who is labeled with a more euphemistic or exotic term.

THE LEAST RESTRICTIVE ENVIRONMENT

The absence of historical data pertaining to public school placement for these children dictates a virtual trial and error method for providing a least

restrictive environment. Of course, considerations for placement must be based upon what has been learned about the characteristics and educational needs of such children.

Any choice of program must also be considered in the light of federal regulations which require, on the one hand, that a child be placed as near his home as possible, and on the other hand, that there will be no harmful effects upon either the child or the quality of service as a result of such placement (*Federal Register*, 1977).

One large school district (Pinellas County, Florida), for example, lists the following alternatives for placements of autistic children, based upon students' needs:

1. Emotionally handicapped self-contained classroom in a special day school.
2. Non-public residential or day school through a contractual arrangement or other written agreement.
3. Special class in a hospital or treatment center.
4. Individual instruction in a hospital or home setting.
5. Profoundly handicapped self-contained placement in a special day school (*District Procedures*, 1978, p. 144).

Such a diverse array of programs constitutes a dilemma to be faced by the local education agency in selecting an appropriate organizational structure. One 10-year-old boy, whom we will call David, was attending a class which consisted primarily of children who were classified autistic. As is the case with most of these children, David had a cumulative file that covered his entire life. He had been seen by professionals from every discipline dealing with child growth and development and all were reluctant to label, but most diagnoses hinted at autism.

Prior to his enrollment in our school district, he had participated, with very little success, in many different programs which included private clinics and hospitals. During the course of nurturing this youngster, the parents became rather sophisticated in the entire field of behavior disorders, both through personal contact with professionals and by studying the literature in the field. Even before the federal mandates required it, it was evident that the mother would be very much involved in any decision concerning her child and his educational plan.

The program for autistic children was housed in a special school along with trainable mentally retarded (TMR) youngsters. The class in which David was placed was formed probably as a result of mislabeling of TMRs as much as for any other reason.

The choice for David was a fortunate one in this instance. The school had a mood of acceptance and gave very positive support to this class. The principal was proud to have one of the few classes for the autistic in his school and used the class as a good example of handling children. The teacher was trained to teach emotionally handicapped children and his operant techniques caused David and his classmates to show considerable progress.

One major problem existed. The class was more than 20 miles from David's home, there was no school bus transportation, and the mother was transporting the child both to and from school which consumed virtually her

entire day. This procedure was also extremely expensive to the family. The local school board had not paid the family for these expenses. With these pressures building, coupled with some positive behavioral changes on David's part, another staffing was held to consider a change in the educational program. There was a special education center in David's transportation zone with a population of handicapped children, none of whom were below the educable level of retardation. Several classes were already in operation to serve emotionally handicapped children. Placement of David in this environment would seem to serve several useful purposes for all concerned:

1. He could ride the bus to school.
2. He would be moving to a less restrictive environment.
3. His mother could be freed to perform her daily chores.
4. It would save everybody money.

Not so! We overlooked some important variables. The principal of the receiving school was reluctant to install a class for such children and was not comfortable with the presence of David in his school. The teacher, although trained and certified to teach the emotionally handicapped, was afraid of David. The school lunch personnel were not accustomed to serving such a child. The bus drivers had never dealt with such behavior, and, to add to the problem, the driver of David's bus allegedly encouraged sexual experimentation between two retarded youngsters and was dismissed. This incident, together with accompanying uproar, was considered by David's mother to be traumatic to the child.

These problems became so overwhelming that the entire plan was scrapped and David was transferred back to his original, more restricting, setting.

THE INDIVIDUALIZED EDUCATIONAL PROGRAM

The implementation of an Individualized Educational Program (IEP) is central to the provision of a free appropriate public education for a handicapped child. It is important that the IEP be a current, relevant guide for the teacher in making day-to-day decisions about the child's instructional program. It is also important that it be written, not in educational jargon, but in language that can be easily understood by any individual involved with the child in the educational setting—principal, teacher, parent, social worker, psychologist, counselor, paraprofessional, aide, or university practicum student.

The content of the Individualized Educational Program (IEP) is specific, according to the provisions of Public Law 94-142. It must include: (a) the child's present level of educational performance, (b) long range goals and short term objectives of the educational program, (c) specific services and resources to be provided, (d) extent of participation in regular education programs, (e) beginning data and anticipated duration of service delivery, (f) criteria and procedures for evaluating the achievement of instructional objectives (*Federal Register*, 1977).

Assessment of the Autistic Child

The IEP must be based upon the results of medical, psychological, and educational assessment, and accurate assessment of autistic children is

extremely difficult. The assessment procedures generally include: (a) a comprehensive physical examination, including a psychiatric neurological examination, is deemed appropriate, (b) speech and language assessment, (c) social and developmental history, (d) psychological assessment, and (e) an evaluation of social maturity (*District Procedures*, 1978).

The selection of formal assessment instruments for use with autistic children is often a frustrating task. Dubose, Langley, and Stagg (1977) have noted that no single assessment instrument can adequately tap the potential of all severely handicapped children or serve all examiners' purposes. They suggest the following characteristics as desirable in instruments used in the assessment of severely handicapped children:

1. They should be easily obtained and simply scored.
2. They should possess adequate validity and reliability.
3. The items should be primarily manipulative in nature.
4. Scoring should be minimally dependent upon the child's speed of performance.
5. The items should be adaptable across all handicapping conditions.
6. The instrument should yield data immediately transferable into sequentially planned developmental activities for educational programming (p. 7).

It would also seem advisable to consider intact sensory areas, if any, or the child's most effective modes of input and output. Matching the tests to the child's characteristics might assure a more realistic judgment of his present level of performance. It might, therefore, be appropriate to use such instruments as Leiter Performance Scale (Leiter, 1969), or the Bayley Scales of Infant Development (Bayley, 1969), or only portions of the Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974) or the Binet (1960), depending upon the age of the child and the severity of the impairment. If information concerning the child's most effective learning style is not readily available from previous observations by parents or professionals, it would seem logical to begin the informal assessment procedure prior to formal evaluation. Observations of the child in the school or home setting could yield valuable data concerning motor, social, and cognitive development, particularly in the area of language.

Although Public Law 94-142 requires at least an annual review of the IEP, it it necessary, in order to provide a sequential developmental program, to plan for an almost continuous assessment process. Periodic total educational reassessments, whenever deemed warranted would be highly desirable.

It is also appropriate to conduct assessment in all three domains—cognitive, affective, and motor. Personal experience with identification of autistic children has revealed that assessment of the motor domain is often neglected, perhaps because it may not be considered an area of severe deficit. The present authors have noted that autistic children often exhibit considerable strengths in the motor area. Such skills are of great significance in the development of the child's educational program for several reasons:

1. Assessment in the area of strength may constitute a more realistic appraisal of the child's capacity for learning.

2. An area of strength may be used in the teaching of other skills and information.
3. An educational task in an area of strength, which would presumably be comfortable for the child, should also be itself rewarding and might therefore serve as an intangible reinforcer.

Determination of Goals and Objectives

Because of the disturbances of developmental rates and sequences that are features of the autistic syndrome, selection of both long range goals and short term objectives may present great difficulty.

> Gross motor milestones may be normal while fine motor milestones are delayed; . . . some cognitive skills may develop at expected times while others are delayed or absent; imitative behavior and/or speech may be delayed in onset until age 3, followed by rapid acquisition to expected developmental level (Ritvo and Freeman, 1977, p. 1).

It is extremely important that the evaluation of goals and objectives be conducted at regular intervals in order to modify the child's program when appropriate.

The beginning point in each area of the child's instructional program must be based upon an accurate assessment of the child's present level of functioning. In determining strength and deficits, it would be logical to compare the child's achievement level with an expected level of development. It would, therefore, be appropriate to use either chronological age or mental age as a point of reference. It is very important to note areas of talent, if present, as well as critical needs.

Annual goals should be stated in general terms, such as "improvement in verbal and nonverbal communication," and are essentially unmeasurable. Short-term objectives, however, as explicit, such as "to respond appropriately to a verbal command, 'touch your nose.'" Priorities may be established not only in terms of the child's level in each area, but also according to the academic, motor, or social demands of his environment.

Qualities of a Successful Program

What, then, constitutes the least restrictive environment for an autistic child? What are the necessary qualities of an appropriate educational program for severely or profoundly disturbed?

The principal. The importance of the attitude of the in-school administrator cannot be overestimated. The principal of Safety Harbor Exceptional Student Center, Pinellas County, Florida, in which is housed a highly successful program for autistic children, made the following comments:

> I think its a matter of attitude. Some principals see the child coming and think "Oh, God, not another one. This is the pits!" I just say, "How wonderful! Here is another child who needs us. Nobody else can do for this child what we can do." (Diem, 1978).

Such a positive attitude on the part of the in-house administrator is contagious. Effects are seen within the school in the lunch room, on the playground, at the bus ramp, among the aides and secretaries, and, in fact, a climate of service to severely handicapped children permeates the total educational setting.

The teachers. The teachers in successful programs for autistic children must possess unusual attributes. They must be dedicated to serving these children, patient, persistent, and realistic in attitudes. They must have a thorough knowledge of task analysis and operant techniques as applied in the classroom. They must also be knowledgeable in patterns of growth and development in order to plan for an appropriate IEP. Reinforcement of successive approximations is a necessary strategy since movement toward appropriate behavior is often painfully slow. Ray and Paul are excellent teachers of the autistic at the Safety Harbor Exceptional Education Center, they follow procedures similar to those outlined above, and children in their classes are manifesting measurable and observable improvement.

The case of Stephanie helps to illustrate how teachers cause programs to succeed. Stephanie is now five. When she was an infant she was "donated" by her parents to the Association for Retarded Citizens (ARC) residential center. At age three it was determined that she was either deaf, aphasic, autistic, or all of these. Her behavior was such that she kept two adults busy most of the time. She was placed in a pre-school class for the deaf and the entire staff developed apoplexy. The cumulative folder had grown to the usual proportions and many teachers, administrators, psychologists and other professionals were extremely busy trying to find a way to "donate" Stephanie to some other agency. She was returned to the residential center.

This year, she was placed in Paul's class at Safety Harbor because he showed a willingness to work with her and everyone knew he had the skills. Recently, when Paul was asked about Stephanie's progress, he said, "Oh, she's a real neat little girl. I love her and she is a joy in my class" (Polgar, 1978).

Teachers possessing the qualifications and attitudes displayed by Paul and Ray are probably the most significant variables in the total educational milieu.

The facility. Some attention to bricks and mortar seems to lend more effectiveness to good programs for the autistic child. Renovations to the Safety Harbor Center had made life much easier for both children and teachers and the program more manageable and effective.

For example, the children were previously unloaded from a bus in a central area which required the autistic children to traverse a long hallway and find their room. As often as not, this procedure resulted in chaos, despite the numbers of adults available.

The bus ramp has recently been installed along the front of the building and each room has a door opening on the ramp. Children are now unloaded and ushered immediately into the appropriate classroom.

The principal, along with the parent group, has been instrumental in influencing local civic and business organizations to install a heated swimming pool. Autistic children take their turns using the pool and several of them have learned to swim. Although the facility was originally designed for general education and TMR children, specific alterations have been

accomplished to enhance the program for these severely handicapped youngsters. In many cases, minor architectural or physical changes may serve to improve the logistics in dealing with these children and cause the program to function more to the benefit of both teachers and children.

It is apparent that implementation of the concept of Least Restrictive Environment and construction of the Individualized Education Program for autistic children involves every facet of the child's world. An attempt has been made to emphasize some of these variables as they apply in a public school setting. Importance has been attached to facilities, teachers, administrators, parents, support personnel, *i.e.*, bus drivers, aides, lunchroom workers, and secretaries. Procedures for assessment and actual building of an IEP have been discussed. While these activities have resulted in some success, it is understood that work in this entire difficult area has just begun. Much research is needed before the provision of an optimum educational program for severely and profoundly disturbed children can be assured.

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RESEARCH IN THE MODIFICATION OF DEVIANT BEHAVIOR OF AN AUTISTIC CHILD: A PRELIMINARY REPORT

Richard S. Neel and Felix F. Billingsley

INTRODUCTION

One of the major problems in educating severe behavior disordered children is how to replace inappropriate verbalizations such as bizarre speech and immediate or delayed echolalia with appropriate speech. To date, a variety of approaches have been attempted with varying degrees of success. These have included: (1) changing echolalia into functional speech by shaping (Risley and Wolf, 1967), reading (Tramontana and Shivers, 1971), and interruption (Freeman, Ritvo, and Miller, 1975); (2) employing imitation procedures (Lovaas, 1966); and, (3) using signing techniques, either alone (Creedon, 1973) or in conjunction with speech (Schaeffer, Musit, Kollinzan, and McDowell, 1977). Many of these attempts have demonstrated only limited success in laboratory settings with little generalization to the classroom. This study reports the preliminary results of a sequential training program to teach a severe behavior disordered child (David) to converse in a classroom setting.[1]

The first general goal of the program was to eliminate David's inappropriate verbalizations, which consisted of delayed echolalia and bizarre speech.

This could be accomplished in a variety of ways. Punishment of inappropriate responses was one choice. Several such techniques are reported in the literature (see Neel, 1978, for a review). Most of these techniques have limited generalizability to other people and settings, and frequently produce undesirable responses; therefore, punishment techniques were not considered the program of first choice.

Another possibility was to differentially reinforce other behaviors. This process was tried in the classroom before the study was begun with no success. Each verbal cue or praise became part of the delayed echolalion, and the use of non-verbal instructions and rewards produced only

[1] This research was conducted at the Experimental Education Unit, Child Development and Mental Retardation Center, University of Washington, Seattle, Washington. We gratefully acknowledge the assistance of the many patient graduate students who have participated in this project as data collectors, reliability observers, consequence dispensers, and task administrators. We are particularly indebted to Joan Kayser and Robin Munson for their continued involvement and many substantive suggestions.

mute responses. As a goal was the elimination of inappropriate verbalization (a "mute response") prior to any attempt to build appropriate speech, it is felt that the use of a non-verbal reinforcer with a DRO structure might be of use in this project. In terms of potential as a technique to transfer to the classroom staff, however, the procedure seemed rather cumbersome. The use of DRO, therefore, is initially held in abeyance.

A third technique was extinction. Lovaas and Simmons (1969) successfully extinguished head banging behavior. Jones, Simmons, and Frankel (1974) has also shown that extinction could be used to eliminate severe, self-destructive behaviors and that the results could be transferred to a ward setting. Since it was desirable that a procedure be used which could easily be employed in the classroom, a modification of Jones' technique was used as the first intervention.

The second general goal was to teach David to carry on a teaching conversation; *i.e.*, to respond appropriately to verbal and non-verbal instructions presented by the manager. Since we were not attempting to develop initial verbal responding in a mute child, a procedure was planned in which appropriate and inappropriate verbal responses would be differentially consequated.

PROGRAM STEPS

The program was designed to include nine steps that would produce functional speech in a classroom instructional setting. The steps are listed here. An explanation of each is given in the results section.

Step 1—Withholding of verbalizations when no manager is present.
Step 2—Withholding verbalizations when a manager is present.
Step 3—Withholding verbalizations and responding nonverbally when a manager presents a task non-verbally.
Step 4—Withholding verbalizations and responding nonverbally when a manager presents a task and gives verbal instructions.
Step 5—Manager introduces new tasks.
Step 6—Verbalizes appropriately during sessions in which a manager gives verbal directions requiring non-verbal response and asks questions requiring verbal answers.
Step 7—Verbalizes appropriately during sessions in which manager asks questions requiring verbal answers.
Step 8—Transfer program to classroom in semi-confined area.
Step 9—Fade use of semi-confined area.

SUBJECT AND SETTING

David is an 11-year-old boy who has been labeled severe behavior disordered, autistic, psychotic, and aphasic-like by a variety of hospitals and schools over his lifetime.

He exhibits a large amount of disruptive behaviors, and his speech is either bizarre or consists of delayed echolalion. When frustrated, David will tantrum by kicking, hitting, and screaming. If restrained or ignored when he throws tantrums, David will either vomit or induce a nose-bleed. David will attempt some pre-academic tasks when he wants to, but will tantrum to avoid work or escape the work setting. It is obvious

to all observers that his disruptive behaviors have been successfully used to manipulate significant people in his environment for years.

David is also very adept at manipulating classroom situations. He frequently is able to modify manager's behaviors instead of their modifying his. This makes the classroom with seven other children a very difficult setting in which to educate him. For this reason, it was decided that initially his training would begin in a small room, where most of the extraneous cues and reinforcements could be controlled. Steps one through seven were conducted in a four-by-six-foot room with one table and three chairs. The room was well-lighted and carpeted. Observations were made through a one-way mirror. The observer scored verbalizations using a five-second time sampling technique. The duration of the data collection period was 45 minutes. Verbalizations could potentially be scored on 540 occasions.

Twenty-eight reliability checks were conducted throughout the study by an independent observer. Percentage of agreement ranged between 73 percent and 100 percent with a mean of 93 percent.

Steps eight and nine will be conducted in an experimental classroom in the Experimental Education Unit at the University of Washington. This classroom contains eight severe behavior disordered children ranging in age from eight to 12 years of age. The classroom generally follows a developmental curriculum utilizing the precision teaching techniques outlined in White and Haring (1976).

SOME PRELIMINARY RESULTS

Percentage of verbalizations during each experimental session across all phases of the study to date are provided in Figures 1a, 1b and 1c. These data are plotted on semilogarithmic (ratio) charts and degree of change in the data, in terms of acceleration or deceleration within phases, is described by median slope lines-of-progress (White, 1972a). The use of such chart paper and lines-of-progress have been found, in the general case, to facilitate prediction of subject performance (White, 1972b; White and Haring, 1976). Total number of scoring opportunities per session (generally, 540) is indicated by the "record floor" (White and Haring, 1976) calculated according to the formula: record floor = 100 ÷ # of opportunities. The record floor is shown as a broken horizontal line on each figure. Instances of zero percentage of inappropriate verbalizations are plotted just below the record floor.

Degree of line-of-progress acceleration or deceleration per week is indicated in Figure 1a, b and c by "times" (×) or "divide" (÷) statements. Also included in the figures are median percentages of verbalizations emitted during each phase. Median percentages are located just below 'celeration statements.

Procedures and findings concerning David's performance under each experimental condition within each step are discussed below.

Step 1: Withholding Verbalizations When No Manager Is Present

Phase 1: Extinction 1. During this phase, David was simply placed in
 the experimental room alone with a variety of materials to play with from

12:30 to 1:30 p.m. each day. Play materials included items such as paper, pencils, crayon, tinker toys, toy cars, and puzzles. No instructions were given to David concerning desired behavior and, at the end of the hour, he was escorted back to the classroom by his teacher or one of the observers.

As indicated by Figure 1a data, David emitted verbalizations on an average of 95 scoring occasions (17.5 percent) per session, with only a very slight deceleration across time, during the first three and one-half weeks of this phase. Following a two and one-half week quarter break, this phase was reinstituted for an additional two weeks.

Phase 2: Extinction 2. Although a reduction in median level of verbalizations was observed as compared to Extinction 1, the slight deceleration noted the previous quarter was no longer apparent; *i.e.*, it could not be predicted that David would improve any further in the absence of intervention.

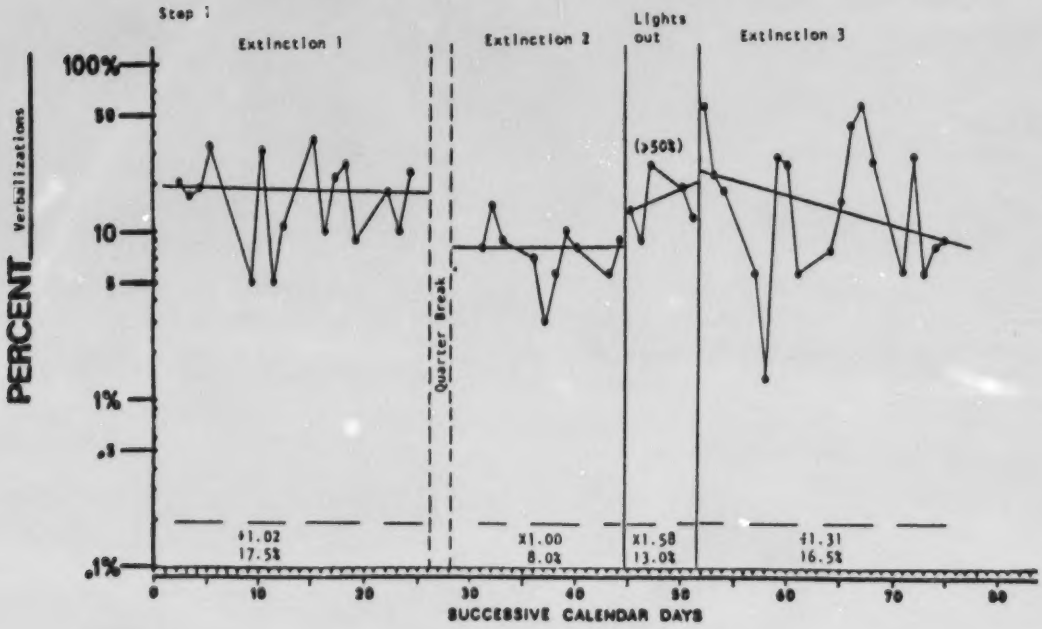
It should be noted that, during both extinction phases, David engaged in a number of behaviors which were interpreted as attempts to escape or avoid the situation. Primarily, those behaviors consisted of drawing on the walls and urinating and defecating in his pants. Whenver wall drawing was observed, the experimenter entered the room and, without commenting, took his pencil away. This procedure rapidly eliminated drawing on the walls. His defecation and urination were simply ignored. With the cooperation of his parents, he was not allowed to remove his soiled pants until he returned home for the day. This procedure was effective in eliminating pants-soiling, although it was not a popular remedy with his teachers, his bus driver, and others with whom he came in contact.

Phase 3: Lights Out. On the basis of the unacceptable deceleration noted during the extinction phases, we decided to apply what was considered a mildly aversive consequence for verbalization. Whenever David emitted a verbalization, the lights in the experimental room were turned off for 15 seconds using a switch in the observation room. If he talked during the 15-second interval, the lights remained off for an additional 15 seconds.

Unfortunately, it appeared to those observing David that he delighted in being able to turn the lights on and off. Therefore, due to the increase in level of verbalizations from a median of 8.0 percent to 13.0 percent, and to a pronounced acceleration across time which may be observed in Figure 1a, this phase was terminated after five days. Essentially, we seemed to have stumbled onto an effective reinforcer for talking! (The data point in Figure 1a labeled ">50 percent" indicates that verbalizations were scored on considerably more than 50 percent of the possible occasions. During the session in which those data were collected, however, the observer was alone, and was required to both collect data and turn the lights on and off in response to David's verbalizations. (In the attempt to do both jobs at once, some data were lost.)

Phase 4: Extinction 2. At this point, we felt that perhaps extinction had simply not been given a fair chance. It had, after all, taken Jones, *et al*., (1974) 12 weeks to extinguish a child's head-banging behavior using similar procedures. To this point, David had only experienced five and one-

Figure 1a
Percent of verbalizations emitted by David during phases 1 through 4.



half weeks of extinction treatment. An additional extinction phase, therefore, was implemented in which the procedures were the same as during Extinction 1. An examination of the resultant data in Figure 1a over a three and one-half week period does, in fact, indicate a decelerating trend (a pattern which tends to confirm the reinforcing function of Lights Out on verbalizations). If that trend continued, however, it would have taken approximately 15 additional weeks for verbalizations to decrease to the zero point. As that length of time was considered excessive, a fourth experimental phase was instituted.

Phase 5: Music. Due to David's apparent enjoyment of music in the classroom, and the fact that he frequently played records (classical) at home, a differential reinforcement of other behaviors (DRO) procedure (Sulzer-Azaroff and Mayer, 1977) was implemented, whereby, if upon entering the experimental room David remained quiet for 15 seconds, a piece of classical music was played over the intercom. If verbalizations occurred, the music was discontinued until he was once again quiet for 15 seconds.

The effects of music over a five-day period were similar to that of Lights Out; *i.e.*, verbalizations increased, both in level and trend (see Figure 1b). At this point, we began to get a message: David's verbalizations were reinforced by the opportunity to control situations, and that reinforcement was stronger than the contingencies we had thus far employed. We, therefore, decided to maintain the DRO procedure, but to use what we hoped would be a more powerful consequence for non-verbal behaviors.

Step 2: Withholding Verbalizations When a Manager Is Present

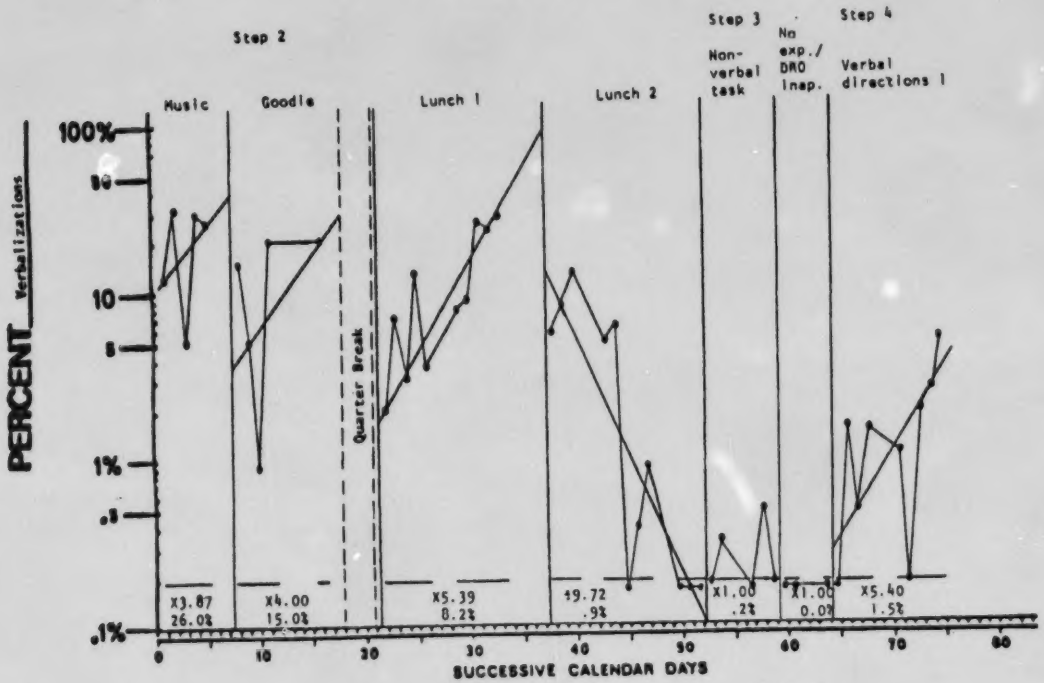
Phase 6: Goodie. During this phase, the DRO tactic was continued; however, as consumables have been found to function as highly effective reinforcers for a wide variety of behaviors across a number of handicapping conditions, David was now presented with a piece of peanut following every 15-second interval of non-verbal behavior. As no mechanical dispensers were available for that purpose, it was necessary to bring a manager into the room to dispense the peanuts. We, therefore, moved to the next step in the program even though David had not achieved the criterion for movement from step to step (*i.e.*, three days in which no more than two verbalizations were recorded).

Figure 1b data indicate that, although the median level of verbalizations was reduced from 26 percent to 15 percent, trend acceleration across the five days of the phase actually increased as compared to the previous phase. Peanuts, therefore, did not seem to be an effective reinforcer for nonverbal behaviors in this situation. It is, of course, possible that this form of consumable might have been reinforcing had our timing been better. As the experimental session immediately followed David's lunch period, he may have simply been satisfied on food. The possibility of such satiation, however, was reduced during the next phase which followed a two and one-half week quarter break.

Phase 7: Lunch 1. Following the break, the time period during which an experimental room could be obtained for the purposes of this study was changed to the hour between 11:30 a.m. and 12:30 p.m., which coin-

Figure 1b

Percent of verbalizations during phases through and percent of inappropriate verbalizations during phases 5 through 11.



cided with David's lunch period. Therefore, rather than provide a "goodie" on a DRO schedule, he was given his lunch (most frequently, a sandwich, cookies and a soft drink) in small portions for every 15 seconds of non-verbal behavior. He was told that he could either eat his lunch as he earned it, or that he could save all or some of the portion which he earned, and eat it following conclusion of the session.

By this time, any doubts which we may have had concerning the difficulties in training autistic children had been dispelled. We were, however, unprepared by the total failure of the present intervention which may be noted in Figure 1b. Whereas, David began the phase with a relatively low level of verbalizations, by the middle of the second week, he was talking at the high levels which had characterized previous phases. This, on the basis of our plan, meant that he was only earning a little more than half of his lunch. Fortunately, at the end of the second week, we were able to identify where our system was breaking down . . . it was simply that our plan was not being followed. David's classroom teacher had not understood that David was to be allowed to eat only that portion of his lunch which he had earned. Therefore, following his return to the classroom each day, she had provided him with the remainder of his lunch. in other words, David had only to delay for an hour in order to obtain lunch regardless of his behavior in the experimental setting.

Phase 8: Lunch 2: The misunderstanding with David's teacher was resolved, and procedures implemented during Lunch 1 were continued. The results, now that lunch was truly contingent on other-than-verbal behaviors, were dramatic. David's verbalizations decelerated rapidly and, by the end of the second week of the phase, had dropped to 0.0 percent of scoring occasions. Following three days in a row at 0.0 percent, the third step of the program was implemented.

Step 3: Withholding Verbalizations and Responding Non-Verbally When a Manager Presents a Task Non-Verbally

Items from the Leiter International Performance Scale were selected for use during this step as the Leiter was designed for non-verbal administration and response, and because it seemed to possess intrinsically interesting, game-like qualities. Scale materials consist of a wooden response frame with an adjustable metal card holder, cards on which are printed stimulus pictures, and wooden blocks with response pictures attached. The items require that the subject insert the blocks into notches in the frame so that they correspond to pictures on a card attached to the frame. Items include: exact matching, picture completion, number estimation, analogies, spatial relations, similarities, etc.

The manager did not score correct and error responses since performance on the scale was not of interest in this study. In addition, the manager was permitted to make variations on the items presented in the test manual to insure sufficient variety to relieve boredom (of both David and the manager). The following format was employed for task presentation: (1) item set up by manager; (2) manager provided demonstration; (3) manager provided non-verbal cue for David to respond; (4) if David did not respond following the cue, the manager waited 10 seconds and

provided a second cue; (5) if David responded correctly a new item was set up; (6) if David responded incorrectly, the item was set up again and David was cued to respond; and (7) if the response was still incorrect, the manager prompted the correct response by pointing, etc.

Phase 9: Non-verbal Task. The DRO procedure employing lunch as the reinforcer was retained in this phase, with the addition of the nonverbal task and a second manager in the experimental room to administer the task. Upon initiation of this phase, it was decided that for five days, David would be told prior to entering the experimental room that he would be given things to do by the manager, and that he would earn his lunch by being quiet during that time. Following the five-day period, the explanation would be terminated regardless of David's verbal behavior.

Figure 1b data indicate that, although verbalizations did not remain consistently at zero throughout this phase, their frequency of occurrence was extremely low.

Phase 10. No Explanation/DRO Inappropriate. Conditions were similar to those in the previous phase except that the explanation cited above was terminated and the DRO procedure was altered. In anticipation of future steps, in which verbal responses would be required, the provision of food was made contingent on 15-second intervals, in which no inappropriate verbalizations were noted rather than on intervals of absolute quiet. We also began collecting data separately on the number of appropriate and inappropriate verbalizations. These data were meant to provide a baseline of appropriate verbalizations against which the effectiveness of interventions designed specifically to increase such verbalizations could be assessed. Inappropriate verbalizations were defined as: laughing/squealing for no apparent reason; use of incorrect personal pronouns (*e.g.*, "He has to work now"); high-pitched voice inflections; inaudible responses, repetitous or echolilic comments; and comments unrelated to the task or conditions within the experimental room. Appropriate verbalizations were defined as anything else.

During this phase, no instances of appropriate verbalizations were observed. As a matter of fact, during the three and one-half month period from the beginning of this phase until the end of Phase 14, a total of only six occasions were scored in which David emitted appropriate verbalizations. Due to the almost total absence of appropriate speech, the data for this and all phases which follow reflect only inappropriate verbalizations. As may be noted in Figure 1b, inappropriate verbalizations remained at zero for the first three days of this phase, thereby meeting the criterion for movement to Step 4.

Step 4. Withholding Verbalizations and Responding Non-Verbally When a Manager Presents a Task and Gives Verbal Instructions

Conditions within this step were similar to those in Step 3 in that the manager presented Leiter items, to which David responded non-verbally; however, the manager now presented the items accompanied by verbal directions (*e.g.*, "Point to the one that goes next;" "Match the red one with the red one").

Phase 11: Verbal Directions. All conditions remained as in the preceding phase with the addition of verbal directions from the manager as described above. As expected, those directions seemed to act as discriminative stimuli for speech. Data in Figure 1b indicate a rapid acceleration in David's inappropriate verbalizations throughout this two-week phase which terminated with the end of the academic quarter.

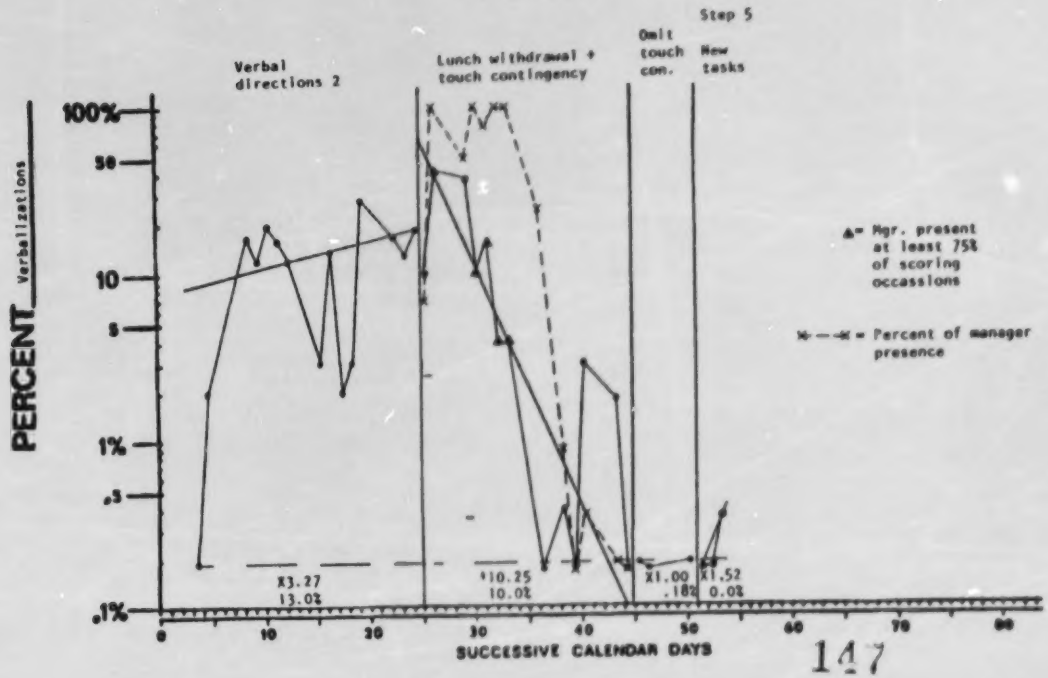
Phase 12: Verbal Directions 2. As the DRO procedure using lunch as the reinforcer had proven highly effective in previous phases, we felt that perhaps it would decelerate David's verbalizations if continued for a longer period of time. Therefore, it was reinstituted following a five and one-half week quarter break. At that point, room scheduling difficulties required that the time of the experimental session be changed to the hour between 10:30 and 11:30 a.m.

It may be observed in Figure 1c that David made only one verbalization on the first day of the phase. During the following three weeks, however, the data reflect rapid acceleration, and a change in median level of performance from 1.5 percent to 13.0 percent. In addition to the increase in inappropriate verbalizations during this phase, an increase occurred in both the intensity and frequency of an undesirable class of behaviors, which had been observed in previous experimental sessions and in the classroom. This behavior class, which we euphemistically referred to as "touching," included touching (with hands or feet), rubbing, and generally fondling managers. Although there seemed to be obvious sexual overtones to this behavior, David did not confine his touching to either males or females. As touching of this nature was extremely aversive to the research assistants, we attempted a number of tactics to eliminate the touching. These included telling David "No" or "Don't touch," removing his hands in a forceful manner, and, when touching escalated to a level that was unendurable to the manager, slapping his hands. None of these tactics were successful and a different strategy was applied concurrent with the initiation of the following phase.

Phase 13: Lunch Withdrawal/Touch Contingency. In contrast to the previous DRO procedure, in which consumables in the form of lunch were provided contingent upon intervals of quiet, an aversive consequence in the form of lunch withdrawal was applied for inappropriate verbalization. He was then allowed to eat all food which remained following the experimental session. In addition, whenever he touched either of the managers, they immediately left the experimental room for the remainder of the session, and David lost his lunch for the day. Data concerning the frequency of verbalizations, however, continued to be collected. (On two occasions, indicated by the variation in record floors for sessions one and three, data were not collected during the entire session as the observer thought collection was to cease when the managers left.) Figure 1c data indicate that David's verbalizations decelerated rapidly during this phase. However, this decline throughout the phase could not be attributed to the response cost intervention as it may also be noted in Figure 1c that the number of scoring occasions, in which the managers were in the experimental room also rapidly decelerated. As a matter of fact, by the end of the phase, David was touching a manager almost as soon as he or she entered the room. Once again, David had gained control.

Figure 1c

Percent of inappropriate verbalizations during phases 12 through 15. (Value of line-of-progress and median for phase 13 were calculated on the basis of sessions when managers were present at least 75% of scoring occasions.



He was able to terminate the presence of the managers by simply touching one of them. Then, in the absence of discriminative stimuli for verbalizations, he would sit quietly until the end of the session. For David, the reinforcing value of control was apparently stronger than the aversive aspect of losing lunch.

On the basis of the sharply decelerating line-of-progress indicated in Figure 1c which was based only on the five sessions, during which the managers were present at least 75 percent of the scoring occasions (indicated by triangular data points), we felt that the response cost tactic held promise. In order to demonstrate its effectiveness, however, it was necessary for us to revise our approach to touching.

Phase 14: Omit Touch Contingency. During this phase, the response cost procedure was maintained for inappropriate verbalizations, but an extinction procedure was initiated for touching. We rearranged the positioning of the managers so that a table was always between them and David. David could, therefore, reach across the table and touch their hands and arms (or feet), but had to get out of his chair in order to touch any other portions of their bodies. As the managers felt that they could tolerate David's hand, arm, and feet touches, they simply ignored such behaviors. If he left his chair, the manager presenting the task firmly directed him to "Sit down"—a command which he had always followed in the classroom. Although no data were gathered concerning touching, this tactic was apparently successful in that the managers and observers have reported only sporadic touching since its implementation.

In addition, Figure 1c data indicate that verbalizations occurred on less than two scoring occasions during each of the three days of this phase. We, therefore, moved to the fifth step of the program.

Step 5: Introduce New Tasks

Eventually, in the classroom setting, David will be expected to suppress inappropriate, and emit appropriate, verbalizations in the presence of a variety of task stimuli. A variety of new tasks were introduced during this step, therefore, to determine whether inappropriate verbalizations would be suppressed in the presence of tasks other than the Leiter and, hopefully, to facilitate generalization in the future.

Phase 15: New Tasks. The response cost procedure was maintained and a variety of new tasks were presented in place of Leiter items. These tasks included block designs and picture sequences, peg-board items, matching and sequencing designs, etc., and were presented verbally by the manager. All tasks required that David engage in a non-verbal response.

As in the previous phase, David achieved the criterion for moving to the next step in three days. Figure 1c data indicate that zero inappropriate verbal responses were scored during the first two days of the phase, and two responses were scored on the third day.

Apparently, some degree of generalization across tasks was achieved. We are now ready to require David to respond verbally within the confines of the experimental room during the next two steps. First, a verbal response will be demanded after a motor response; then, a verbal response alone will be required. Those phases will be followed by the critical transition

to the classroom, a change which involves a drastic alteration of the stimulus complex under which David must perform.

Whether David will respond appropriately when verbalizations are required, and whether he will maintain low levels of inappropriate verbalizations in the face of such a requirement and within an altered stimulus complex, are the questions with which our continuing research efforts must deal.

DISCUSSION

So far, the development of an effective program for educating David has been limited to a case study. The procedures developed have not been subjected to the rigors of an experimental investigation. The conclusions drawn from this case study must be tenuous and remain suggestive until the procedures can be replicated within a true experimental design. Two main points deserving of discussion, however, do emerge from the data.

Reinforcing Properties of Control

For David, the ability to control the environment and the arrangements within it appeared reinforcing. This control exhibited itself in different ways during the various phases. David was reinforced by controlling the lights in Phase 3, the music in Phase 5. By Phase 13, he had learned to control even the manager's presence in the room. The control consequence was in fact, in case reinforcing them for David.

Control, therefore, may be a significant competing reinforcer which we must consider in designing instructional formats for severely behavior disordered children. Many of the interventions used in the classroom, as well as in the experimental setting, failed because David was able to acquire reinforcement for inappropriate behavior by controlling the situation. Control seems an area of investigation that warrants further study.

Conditions of Treatment Application

Generic procedures or broad stimulus "types" may or may not be effective depending on the manner of treatment application. Although this point may appear obvious, it seems worthy of emphasis when one considers the number of times educators make statements like, "I tried punishment, but it didn't work," or, "She just won't respond for food." In the present study, we found very clearly that the effectiveness of a particular reinforcer/punisher or generic treatment (*e.g.*, DRO) depends upon the conditions surrounding administration. Whereas, a DRO procedure employing music or peanuts was ineffective in eliminating David's verbalizations, DRO employing lunch proved highly effective *until* the manager began giving verbal directions. It was then necessary to withdraw food on a contingent basis rather than provide it in order to re-establish control. In their efforts to generate effective interventions for pupils who are particularly difficult to train, educators should consider not only new techniques and stimuli, but how old techniques and stimuli may be employed in new ways.

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ECOLOGICAL ASSESSMENT OF PROGRAMS FOR CHILDREN WITH SEVERE BEHAVIOR DISORDERS[1]

Linda Brousard and Coralie Dietrich

ABSTRACT

Complementary use of group and N = 1 techniques for the ecological assessment of programs for children with severe behavior problems was presented. Specifically, the use of a multivariate extension of the Friedman test for small samples, regression and N = 1 techniques were used to analyze the interaction of status, process, and product variables in the assessment of a behavior management program for autistic-psychotic and developmentally disabled children. Applications of the techniques to other settings, research, and teacher training were discussed.

INTRODUCTION

A continuing problem in program assessment for severely behavior disorded children is the wide variability found in these populations. Recent advances in N = 1 designs (Hersen and Barlow, 1976; Kratochwill, 1978) have provided innovative solutions to the variance problem.

However, compelling arguments involving the quality of life of the child, accountability, and the explanatory value of research have been presented to maintain the total group and setting as the unit of analysis. (Hobbs, 1975; Naor, Balthazar, Davis, and Sindberg, 1975; Rhodes, 1967; Solomon and Kendall, 1976). Further, the ecological approach to the care of behavior disordered children encompasses both the individual child and the group (Rhodes, 1967). The purpose of this paper is to demonstrate the complementary use of group and N = 1 designs in program assessment for severely behavior disordered children.[1]

Ecological will be used primarily in reference to naturalistic settings, but more controlled analytical techniques will not be excluded. In addition, discussion will include complementary uses of criterion and norm-referenced measures. The relationship among product, process, and status variables will also be a focal point. The data represents two-and-a-half

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years of continuous assessment of a self-contained unit for severely developmentally disabled children. The complete results of this work will be reported elsewhere. This paper will use samples of the data to illustrate assessment methodology and suggest generalization to other situations.

The discussion will involve three phases: (1) The use of a multivariate extension of the Friedman test for small samples, χ^2, and N = 1 graphic analysis together with group and criterion measures in product or outcome assessment, (2) the use of the multivariate Friedman and N = 1 graphic analysis in process and outcome assessment, and (3) the use of regression analysis to assess the interaction among status, process, and product variables.

SUBJECTS

The subjects were a group of 15 severely developmentally disabled children ranging in age from seven years–five months to 18 years–nine months with a mean age of 11 years–9 months. Eight boys and seven girls were in the group. Diagnostic labels for the children fell into three classes: clinical pathological mental retardation syndromes, psychosis, and autism. Average age of onset of the children's problems was one yr. and two months. The mean SES National Opinion Research Center (Bendix and Lipset, 1953) rating for the group was 64.14. The mean length of placement in the unit was five months.

MULTIVARIATE FRIEDMAN, χ^2, N = 1 GRAPHIC ANALYSIS

Four normative or scaled measures were used for evaluation of program outcomes. The AAMD Adaptive Behavior Scale (Fogelman, 1974). The Developmental Profile (Alpern and Boll, 1972), Balthazar Scales of Adaptive Behavior I. Scales of Functional Independence (Bathazar, 1976), and the Vineland Social Maturity Scale (Doll, 1965). All measures were administered at entry and exit points of the program. The AAMD Adaptive Behavior Scales were also used to measure post exit behaviors. The test statistic used for analysis was a multivariate extension of the Friedman test for small samples (Naor *et al.*, 1975; Puri and Sen, 1971). This multivariate Friedman varies from the original statistic (Sigel, 1956) in that it uses an aligned mean-rank measure which incorporates the combined mean for each scale across all tests. Second, it estimates the probability levels by sampling the permutation distribution. These alterations essentially permit use of this statistic for a broader range of measures than does the univariate Friedman. It is also more sensitive to variance than the univariate test.

The main normative product analysis consisted of Friedman tests of the pre and post AAMD, Balthazar Scales of Adaptive Behavior I, Developmental Profile, and Vineland scores together with the past test and follow up scores of total AAMD scales, Part I and II. For purposes of comparison both multivariate and univariate Friedman analyses were conducted for all AAMD subtests and total scores as well as the Balthazar and Developmental Profile Scales. The Vineland pre-post data and the AAMD post-follow up data had too few variables for such a comparison. An interesting aspect of the results was that the multivariate Friedman yielded significant

levels of probability more often than the univariate. The multivariate test also tended to produce values that indicate higher probability levels than the univariate test. Of the 47 pre-post scores analyzed for the AAMD the two tests yielded different values in 19 analyses. For ten of these the multivariate Friedman yielded a value indicating significance $p > .05$, while the univariate test produced non-significant values. For nine of the AAMD pre-post scores both tests produced values significant beyond the .05 level, but in each of these nine cases the multivariate test indicated a higher probability level. For the Balthazar Scales I two tests were in agreement on all comparisons except the total score. For the total score the multivariate Friedman yielded a value significant beyond the .05 level while the univariate did not. For the Developmental Profile both tests yielded values beyond the .005 level for all subscales. However, for three of the comparisons the univariate test indicated levels at the .005 level while the multivariate test produced values beyond the .001 level. For the total Developmental Profile raw score analysis the multivariate test yielded values significant at the .005 level while the univariate test indicated no significant difference between the pre and post test total raw scores. The univariate analyses of the pre-post Vineland scores was nonsignificant. Significant values, however, were found for the post-follow up comparisons on the AAMD Part I total χ^2 (1) = 12.00, $p < .001$ and AAMD Part II total χ^2 (1) = 5.33, $p < .05$. All the analyses indicated post test gains.

The multivariate Friedman, then, seems to have particular value for normative survey and exploratory outcome studies for deviant populations because it can be used with large numbers of variables and is more sensitive to variance than is the univariate Friedman. The more stringent probability levels yielded by the univariate test do, however, indicate caution in using this test alone without further analysis.

The second group analysis was concerned with criterion referenced measures of outcome. The χ^2 test was used to analyze the extent to which the children in the unit attained criterion on the individualized objectives set for them by a pre entry multidisciplinary team. Assessment was made by direct behavioral ratings of each child. Ratings for this purpose were made at exit and at a follow up point of approximately six to eight months (*M* 8.8 months, *Mdn* 5.9 months). The results produced significant differences for the group at exit χ^2 (1) = 4.26, $p < .05$, but no significant differences between the exit and follow up comparisons. Finally N = 1 graphic analysis were prepared for specific behavioral objectives of each child. These analyses were based on continuous monitoring of each child and provided information on the individual child's performance in the program.

The above analyses present an assessment of outcomes for the total group on both norm and criterion referenced measures with test statistics which are relatively distribution-free. A comparative overall analysis of total measures used is combined with univariate analysis of specific subtests of interest. Finally a simple N = 1 analysis of each child's individual behaviors is provided. This basic combination of assessment techniques can be extended. Levin, Marascuilo, and Hubert (1978) suggest uses of permutation tests in non-parametric statistics which can be used in both non-normal group and N = 1 designs. Further recent advances in N = 1

designs (Hersen and Barlow, 1976., Kratochwill, 1978) provide the basis for more elaborate N = 1 assessment, evaluation, and research designs.

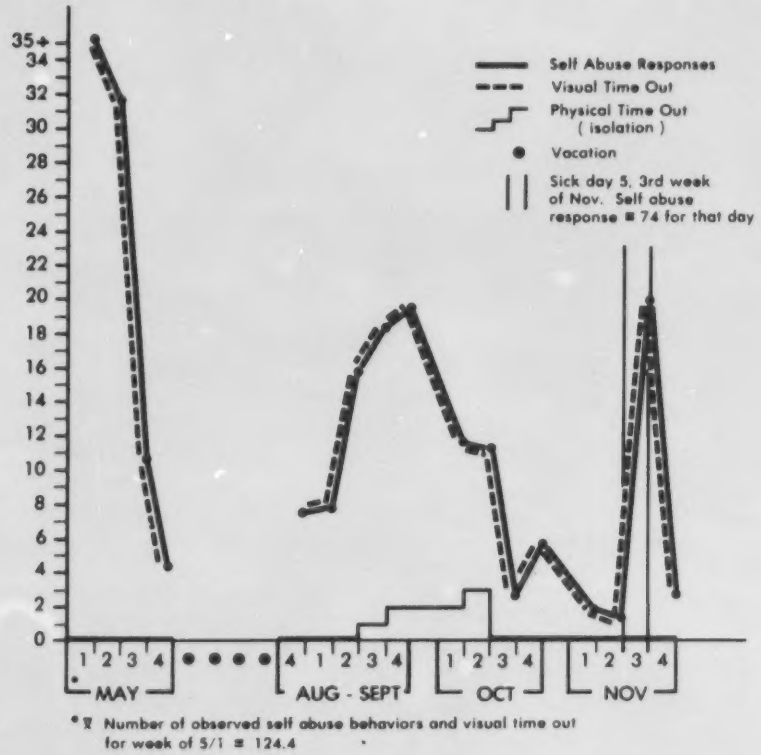
MULTIVARIATE FRIEDMAN AND N = 1 GRAPHIC ANALYSIS

The multivariate Friedman was also used to assess process product interactions. Specifically this technique was used to determine the extent to which specific intervention techniques were used for particular classes of objectives. This study involved first, collapsing the specific objectives for each child into 11 classes. Second, measures for 56 intervention variables were identified: 41 types of behavior management techniques including reinforcement type, reinforcement schedules, shaping, and time out, 11 generalization techniques used across agents and settings, and four duration variables. The management interventions were measured by the time in days each technique was used for a particular objective class. Generalization measures consisted of number of agents, contacts, and duration of time in days within each setting as well as hours of intervention from school and community support personnel. Duration measures were pure time units. Since the number of specific objectives varied for each child, all measures were divided by the number of objectives for each child in each objective class. Third, the multivariate Friedman was used to analyze intervention measures × objectives classes. For the main analyses, the intervention variables were grouped into classes of management procedures, generalization techniques and duration variables for a total of 11 comparisons. All of the overall analysis indicated significant differences $p > .05$, except for comparisons between time out management procedures. Univariate Friedman analyses were then used to determine more specific relationships between the different interventions and classes of objectives. For example, type of reinforcement showed overall significance across all classes. However, univariate analyses revealed the duration of social and peer reinforcement were significantly related to different objective classes in this setting while duration of edible and self-reinforcement did not show any such significant differentiation.

Complementary N = 1 graphic analyses were also used to determine more precise process product relationships for each child. Continuous monitoring of both the child's behavior and type of intervention technique and duration of its use provided data for plotting children's progress as a function of particular intervention techniques. Figure 1 presents a simple illustration of this procedure. Further possibilities for the extended use of this group and N = 1 complementary strategy exist. As mentioned above, more sophisticated N = 1 process-product analysis techniques are readily available. In addition, the multivariate Friedman statistic can be used for any combination of process-product variables needed for program assessment. The technique can also be used for research purposes in more rigorous designs such as those suggested by Caldwell (1968), Hobbs (1975), Kounin (1970), and McGrew (1968). Hersen's and Barlow's (1976) variation of Bergin's and Strupp's (1972) "technique building" strategy also suggest some interesting extensions of the present process-product design. "Technique building" involves using single case N = 1 designs to isolate relevant variables to test a "therapeutic package". Hersen and Barlow suggest that this strategy could be more effectively used by sup-

Figure 1

Relationships between average weekly observed self abuse responses and verbal and physical time out.



plementing the N = 1 findings with large group analyses of the combined treatment variables. A design similar to the multivariate objective × intervention approach in the present study could be used with Hersen's and Barlow's strategy in two ways. First, naturalistic studies of intervention × subject analyses could suggest hypotheses for the initial N = 1 studies. Second, the multivariate technique in this study could be used for the large group analysis following the N = 1 case studies. The Friedman multivariate statistic is particularly appropriate for applying the Hersen and Barlow extension of "technique building" to small groups of highly variant populations such as severely behavior disordered children. Finally, since the present study was conducted in a naturalistic setting the multivariate objective × intervention data also reflect the unit director's teaching style. Similar analysis strategies, then, could be used in pre-service and continuing education training programs for teachers of severely disordered children.

REGRESSION ANALYSIS

Multiple and bivariate regression analysis was used to determine the interaction among status, product and process variables. Status variables in-

cluded measured entry behaviors and history variables. Process variables included number of tasks, time to criterion, total duration time for each objective class and generalization techniques.

Selected findings from these analyses indicate ways in which regression analysis can complement other aspects of evaluation to aid in total program assessment. Table 1 shows the relationship between AAMD entry test results on exit and generalization scores. Entry performance of Part I of the AAMD scales, which are primarily concerned with skills, clearly affect both exit and generalization performance on the same scales. Exit performance on the skill scales is also highly related to generalization performance. No such relationships exist for part II of the AAMD scales which measure personality and behavior problem behavior. These data help in the interpretation of the AAMD pre, post, and generalization results presented in the first section of this paper which discusses product analysis since they provide a measure of the confounding effects of entry performance on exit and generalization performance as measured by the AAMD scales.

Other significant status predictions include verbal behavior, duration of the presenting problem, and socioeconomic status.

The presence of any verbal ability beyond making simple nonmeaningful sounds was highly predictive of performance on the AAMD part I for both entry ($F = 6.82., df\ 3/11., p < .01$) and exit ($F = 15.84., df\ 3/11., p < .001$). No significant relationship was found for entry performance on the AAMD part II, but there was a significant negative relationship ($F = 12.64., df\ 3/11., p < .001$) with exit performance and the presence of verbal ability on this behavior problem section of the AAMD. Duration of the presenting problem

TABLE 1

Regression and Correlation Coefficients for AAMD Variables

Independent Variables	Dependent Variables	Multiple R	R	F
Pre AAMD I[a]	Post AAMDI	.75	.75	17.28**
Pre AAMD I	Generalization AAMDI	.59	.59	5.37*
Post AAMD I	Generalization AAMDI I	.87	.87	29.95**
Pre AAMD II	Post AAMD II	.25	.25	<1
Pre AAMD II	Generalization AAMD II	.32	.32	1.17
Post AAMD II	Generalization AAMD II	.15	.15	<1

[a] AAMD I & II are Total Raw Scores

* $p < .05$

** $p < .001$

had a non-significant relationship with all the AAMD outcome measures with the exception of exit performance on the behavior problem section of those scales ($F = 5.05., df\ 1/13., p < .05$). SES on the other hand was significantly related to exit performance ($F = 3.98., df\ 3/10., p < .05$) on part I of AAMD, but not to any of the other measures of the AAMD scales. Status results such as these can be supplemented by traditional case study approaches, N = 1 experimental designs and functional analyses of both norm referenced and criterion referenced measures for more intensive program assessment. Such findings can also provide hypothesis for research.

In the analyses of the relationship among outcome for each class of objectives and number of tasks within each objective class, time to criterion, and total program duration for each objective class interesting interactions were found. First, for nine of the objective classes number of tasks were the only significantly predictive variables for objective outcomes. Second, time to criterion was significantly related to behavior problem and basic concept objectives. Time to criterion was positively related to success in attaining objectives in the behavior problem area ($F = 3.93., df\ 3/11., p < .05$), but was negatively related to success in basic concept objectives ($F = 8.18., df\ 3.11., p < .01$). Simple duration of the program which included maintenance after criterion had no significant relationship to any of the objective outcomes. These findings indicate a complex interaction among organization, practice and maturation within specific objective classes. In terms of program assessment N = 1 analysis within specific objectives is indicated. In addition, this set of data, perhaps more than any other in the regression analyses, provide definite hypotheses for research.

Analysis of generalization techniques indicated that only those originating and taking place in the unit during the course of programming had any substantial impact on outcomes or follow up performance. For example, analysis of techniques within settings indicated that the number of home contacts by the unit director during the program was significantly related to follow up AAMD behavior problem measures ($F = 7.24., df\ 2/9., p < .05$). Home contacts following exist, future school or institutional contacts, and contacts with other school and human service agencies had no significant relationship with any exit or follow up outcomes. For generalization across agents defined as number of hours of services provided by non-unit support personnel, the only significant relationship was found for hours spent by university students in training. This effect was significant for the AAMD part I skills section at exit ($F = 7.12., df\ 4/10., p < .01$) and for follow up ($F = 9.24., df\ 4/7., p < .01$). When the generalization regression analyses are compared with the somewhat negative generalization, outcomes discussed above in the product analyses section make it obvious that for this particular program intensive assessment and re-evaluation of the generalization components are needed. Thus, regression analysis can also be used to isolate component parts of any program for assessment purposes. Regression analysis, then, can demonstrate the interaction of status, process, and product variables in a program. Such descriptive analyses isolate component parts of any program for more intensive assessment with a variety of group and N = 1 techniques.

CONCLUSION

This paper has demonstrated the complementary use of group and N = 1 analyses to encompass both the individual child and total environment in the difficult areas of program assessment for severely behavior disordered children. Table 2 presents a summary of the types of analyses and test statistics used for each one. Suggestions were made concerning possible extended uses of these techniques to settings other than those represented by the data presented in this paper. Extensions of these techniques to controlled research situations were also suggested. It is also perhaps most significant that both the normative and criterion-referenced measures used in this study are also typically used in special education and other therapeutic settings for severely disordered children as are the procedures for recording type and duration of intervention techniques. The assessment procedures suggested here, then can be applied in typical naturalistic therapeutic programs.

TABLE 2

Summary of Types of Analyses and Test Statistics

1. *Product*	*Group*
A. Norm Referenced	Multivariate Friedman Univariate Friedman
B. Criterion Referenced	χ^2 Analysis of Individual Criterion Rates
	N = 1 Graphic Analyses of Outcomes
2. *Process* *Product*	*Group* Interventions × Objectives Multivariate Friedman Univariate Friedman
3. *Process* *Product*	N = 1 Graphic Analysis of Functional Relationships between Interventions and Outcomes
4. *Status*	*Group* Regression History Variables Related to Entry and Outcome Variables
5. *Process* *Product*	Regression Task and Duration Variables Related to Outcomes
6. *Process* *Product*	Regression Generalization Techniques Related to Outcomes

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A DESCRIPTIVE PROFILE OF THE ADJUDICATED ADOLESCENT: A STATUS REPORT

Lyndal M. Bullock and Thomas F. Reilly

INTRODUCTION

Today, one of the populations most neglected by educators, and specifically special educators, is the adjudicated adolescent. This neglect seems inexcusable since the problem of delinquency is an increasingly serious problem in this country. To illustrate the magnitude of the situation, in 1947, approximately 16 percent of all arrests made in the United States involved individuals under the age of 21. By 1976, individuals under the age of 22 accounted for nearly 60 percent of all criminal arrests (Mathias, 1977). Fox (1976) reports that juveniles are picked up each year by police for alleged acts other than traffic offenses. Of these, two million are actually arrested. It has been estimated by Pooley (1977) that crime and delinquency now cost the American taxpayer $88 billion per year; there is no way to really estimate the cost in loss of human potential.

REVIEW OF THE LITERATURE

A review of the literature revealed a variety of statistics relative to the delinquent/adjudicated population and a profilic array of "seat-of-the-pants guesstimates" relative to the causes of delinquency and recommended solutions. The literature addressed relative to this study, focused primarily upon the nature of delinquency based on: (a) demographic, (b) behavioral, and (c) scholastic data, in that the researchers felt that the combination of these three factors could be best utilized in the development of a descriptive profile of the adjudicated adolescent. There was an abundance of literature which addressed these three factors in isolation: (a) demographic (Ahlstrom and Havighurst, 1971; Clarizio and McCoy, 1976; Clarke and Softley, 1975; Elliott and Voss, 1974; Glueck and Glueck, 1950, 1964; Gold and Reimer, 1972; Jeffrey and Jeffrey, 1970; Kvaraceus and Miller, 1959; Markley, 1974; McCord, McCord and Zola, 1959; Nye, 1957; Pettigrew, 1964; Richette, 1969; Schrieber, 1963, 1964, 1970; Trojanowicz, 1973), (b) behavioral (Friedman, Mann, and Friedman, 1975; Glueck and Glueck, 1950, 1964; LaFave, 1969; Moynihan, 1969; Radzinowicz and Wolfgang, 1971; Teicher, 1976) and (c) scholastic (Critchley, 1964; Elliott, 1966; Mauser, 1974; Mukherjee, 1971; Polk and Schafer, 1972; Schmideberg, 1961; Schreiber, 1963, 1964, 1970; Tarnopol, 1970).

However, there was no research available to the investigators that addressed all three factors utilizing the same population.

PURPOSE OF THE STUDY

Central to the purpose of conducting this study was the development of a descriptive profile of the adjudicated adolescent, which might serve as a reference point and a basis for research in the area of model construction for change agents involved with the adjudicated adolescent population.

SUBJECTS

The subjects utilized in the study were randomly selected from the case files of a licensed psychologist who was serving as a consultant to a juvenile bureau. The office of the psychologist and the juvenile bureau were located in a large metropolitan area in the Southwestern part of the United States. The random sample of subjects consisted of 188 individuals between the ages of 13–6 and 17–11. Each subject had been referred to the consulting psychologist between 1974 and 1978. At the time of referral, the psychologist completed a comprehensive psychological, intellectual, and scholastic evaluation for each subject. Since all evaluations were done by the same psychologist, it is the researchers' opinion that the data obtained in this study are more consistent than data found in some other case study type investigations, where data has been obtained by different individuals.

The subjects utilized in the study were arbitrarily categorized into two groups. There were 46 subjects in the 13–6 to 14–11 age category of whom 21 were males and 25 were females. In the 15–0 to 17–11 age category there were 142 subjects of whom 122 were males and 20 were females. Totally, there were 143 males and 45 females. Of these, 40 were black, 138 were white and 10 were Indian-American and/or Mexican-American.

RESULTS OF THE STUDY

The data relative to this study have been presented according to: (a) demographic, (b) behavioral, and (c) scholastic factors. The demographic factor includes data regarding home status, birth order, number of siblings per subject's family, sex, chronological age, and immediate family members who were, or had been, incarcerated. The delinquent behavior factor relates to the formal categorization of adolescent delinquent behavior into three types: (a) status offenses (those offenses for which adults would not be adjudicated) such as truancy from school, out-of-control behavior, and runaway behavior; (b) crime against person offenses such as armed robbery, strong armed robbery, assault, and drug related offenses; and (c) crime against property offenses such as burglary, larceny, and unauthorized use of a vehicle. The scholastic factor relates to an overview of the academic strengths and weaknesses of the subjects and included reading and arithmetic achievement scores and their relationship to such variables as grade level, intelligence quotients, and special learning problems such as mental retardation and learning disabilities.

DEMOGRAPHIC FACTORS

Family Data for all Subjects

Data presented in Table 1 provides a comparison of family data reported for all subjects by age, race, and sex. It is noteworthy that the $\bar{X}$ number of siblings per family is significantly above the national average for family size. Also, exactly 50 percent of the subjects fell within the lower 50 percent of birth order.

Home Status

Information relative to the home status, at the time of adjudication, of the subjects utilized in this study indicate that 69.5 percent of the subjects came from broken homes, whereas, only 30.5 percent had been living at home with both natural parents prior to adjudication for their present offense(s). This information is reflective of the increasing number of delinquents who come from broken homes. The percentage of subjects living at home with both natural parents is higher (30.5 percent) than the 22.1 percent reported by Messinger (1977), but lower than the 50 percent reported by Hardy and Cull (1974).

TABLE 1

Family Data Reported for All Subjects by Age Range, Race, and Sex

13 years 6 months–14 years 11 months (N 46)

Race and Sex of Subjects	No. of Subjects	Range of Siblings per Family	$\bar{X}$ No. Siblings per Family	No. of Subjects* in Lower 50% of Birth Order
Black Male	3	5–9	6.6	1
Black Female	2	2–8	5.0	0
White Male	18	1–10	4.3	12
White Female	21	1–12	4.0	9
Other Male	0	0	.0	0
Other Female	2	2–9	5.5	1

15 years 0 months–17 years 11 months (N 142)

Race and Sex of Subjects	No. of Subjects	Range of Siblings per Family	$\bar{X}$ No. Siblings per Family	No. of Subjects* in Lower 50% of Birth Order
Black Male	34	1–10	5.2	15
Black Female	1	–9	9.0	0
White Male	83	1–8	4.0	41
White Female	16	1–12	4.5	9
Other Male	5	1–9	3.5	3
Other Female	3	4–6	4.7	3

Race and Sex of all Subjects

The data presented in Table 1 illustrates the race and sex of the subjects utilized in this study. Of the 188 subjects, 23.9 percent were females as compared to 76.1 percent males. The delineation of subjects by race reveals that 21.3 percent were blacks, 73.4 percent were whites and 5.3 percent were either Indian-American or Mexican-American.

Incarcerated Family Members

The case records of the 188 subjects studied, revealed that 14 percent had immediate family members who were or had been incarcerated at the time of the subjects' adjudication. Of these, 9.5 percent were white subjects, 3.2 percent were black subjects and approximately 1 percent were in the Indian-American or Mexican-American category.

School Status

Table 2 illustrates the school status of all subjects at the time of adjudication. For the age category 13–6 to 14–11, about 93% of the sub-

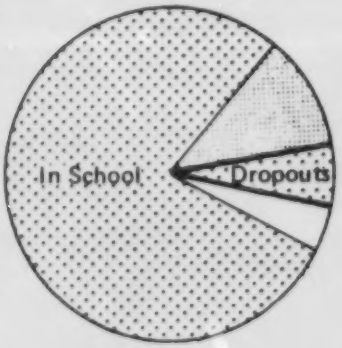
TABLE 2

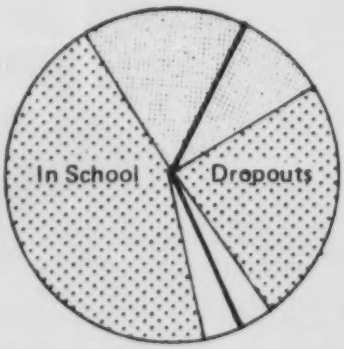
School Status of All Subjects at the Time of Adjudication.

Of 188 Subjects Studied –

Group I –22.9% In School –1.6% Dropouts

Group II –48.4% In School –27.1% Dropouts





Group I

In School – 93.4%
Black – 10.9%
White – 78.2%
Other – 4.3%

Dropouts – 6.5%
White – 6.5%

Group II

In School – 64.1%
Black – 16.2%
White – 45.1%
Other – 2.8%

Dropouts – 35.9%
Black – 8.4%
White – 24.7%
Other – 2.8%

jects were in school; whereas, for the 15–0 to 17–11 age category only about 64 percent of the group were in school.

BEHAVIORAL FACTORS

Types of Offenses

The data presented in Table 3 illustrates the types of offenses committed by all subjects utilized in this study. For the age category 13–6 to 14–11, the most prevalent type of offense is the status offense. In this age category, white subjects accounted for 83.3 percent of the status offenses committed. In the age category 15–0 to 17–11 the offenses were more evenly distributed. The status offenses accounted for 31.7 percent of the offenses, crimes against persons accounted for 38.0 percent of the offenses, and 39.3 percent of all offenses were crimes against property. Upon further analysis of the data presented in Table 3, it may be concluded that white subjects are adjudicated more frequently in each offense category when compared with other groups. It is also apparent that black males in this study, proportionately, committed more crimes against persons than any other group.

For the 40 black subjects, there were 23 crimes against persons committed for which black subjects had been adjudicated. Conversely, there were 34 crimes against persons reported for the 138 white subjects. The percentages of offenses committed per person were 57.5 percent for black subjects and 24.6 percent for white subjects. This substantiates the findings of Ahlstrom and Havighurst (1971) and Wolfgang (1969) who found that blacks are more criminally aggressive than whites based on the high rates of crimes against persons reported.

TABLE 3

Offenses Committed by Subjects, Reported by Age Range, Race, Sex and Nature of Offense

Race and Sex of Subjects	13 years 6 months–14 years 11 months (N 46)*						15 years 0 months–17 years 11 months (N 142)*					
	Status		Crimes Against Persons		Crimes Against Property		Status		Crimes Against Persons		Crimes Against Property	
	N	%	N	%	N	%	N	%	N	%	N	%
Black Male	2	4.3	0	0	1	2.1	1	.7	21	14.8	14	9.8
Black Female	2	4.3	1	2.1	0	0	0	0	1	.7	0	0
White Male	11	23.9	3	6.5	8	17.4	28	19.7	28	19.7	35	24.6
White Female	19	41.3	1	2.1	4	8.7	13	9.2	2	1.4	3	2.1
Other Male	0	0	0	0	0	0	2	1.4	2	1.4	2	1.4
Other Female	2	4.3	0	0	0	0	1	.7	0	0	2	1.4

* All offenses were recorded.

White subjects in this investigation were reported as having previously committed more criminal offenses than any other group. However, if the ratio of serious offenses between black and white subjects were observed, it would be apparent that blacks were adjudicated for serious offenses at a much higher rate (32.6 percent) than white subjects (11.8 percent).

SCHOLASTIC FACTORS

Scholastic Achievement

Information was obtained on the intellectual, reading, and arithmetic functioning of all 188 subjects. The intellectual functioning was based on scores obtained on the Wechsler Scales. The $\bar{X}$ IQ for the total group was 90 which placed them within the lower range of normal intellectual functioning.

Reading and Arithmetic achievement was based on scores obtained from the Wide Range Achievement Test. The data presented in Table 4 illustrates the $\bar{X}$ reading and $\bar{X}$ arithmetic scores of all subjects and the obvious discrepancies which exist between the expected grade level achievement and the actual achievement. Ordinarily, underachievement levels in excess of six months at the primary grade levels and in excess of one year at other levels are considered as significant. For this group of subjects the underachievement ranged from −1.3 to −7.4 years in reading and from −2.9 to −7.0 years for arithmetic. In all cases, greater discrepancies were reported for black subjects than for any other group. These data support other writers who report significant academic deficits among the delinquent population (Schmideberg, 1961; Raymaker, 1974).

After a careful analysis of the data available to the researchers, it was concluded that the underachievement of 66 percent of the subjects could not be attributed to either mental retardation or to specific discernable learning disabilities. Of the subjects utilized in the study, 25 percent were categorized as falling within the range of mental retardation, and 9 percent were categorized as having specific learning disabilities.

SUMMARY

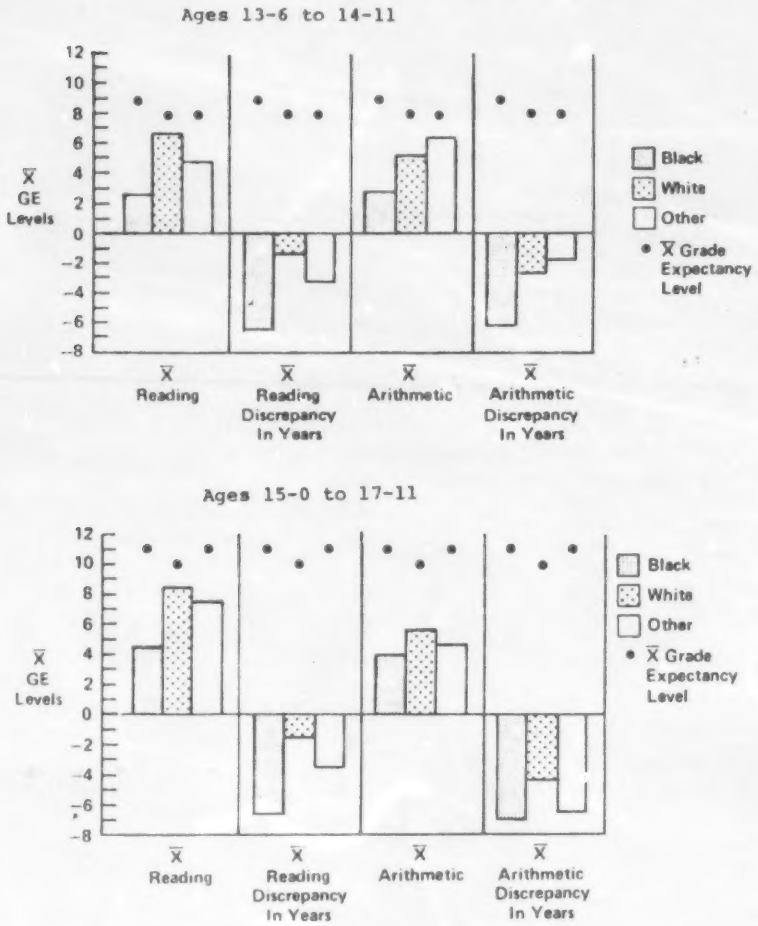
Based on the data obtained from 188 case studies of adjudicated adolescents, a sociopathic profile has been discerned. Although the statements which follow are not uniquely true, in that other groups may exhibit similar characteristics, they do provide additional insights relative to the problems presented to society by adjudicated adolescents.

The sociopathic adolescent may be said to be: (a) chronically antisocial, (b) maintains no real loyalties to any person, group, or code, (c) appears to find trouble wherever he/she goes, (d) profits neither from experience nor punishment, (e) has no real sense of responsibility, (f) has poor judgment, and (g) constantly rationalizes behavior so that it appears warranted, reasonable, and justified.

It can be concluded from the data presented, that certain trends and traits characteristic of the adjudicated adolescent are identified. Given

TABLE 4

Comparison of Reading and Arithmetic Achievement Levels to Grade Expectancy for All Subjects.



this information, it is imperative that a data base be established relative to trends and traits of the adjudicated adolescent such that change agents have a referral point from which to design viable intervention programs.

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THE RELATIONSHIP BETWEEN LEARNING DISABILITIES AND JUVENILE DELINQUENCY

Stanley L. Swartz and Sherrill A. Wall

ABSTRACT

The purpose of this paper is twofold: (1) to review the research literature that investigates the relationship between learning disabilities and juvenile delinquency, and (2) to report the preliminary results of a study conducted by the authors to determine the importance of social class indicators to the learning disabilities/juvenile delinquency relationship.

INTRODUCTION

At the onset it is important to note that previous research on the learning disabilities/juvenile delinquency relationship has been seriously hampered by the absence of a common operational definition of learning disability. Compton (1974) defined learning disabilities as anything which prevents a child from achieving in the classroom. Studies conducted under the authority of the Comptroller General (1977) defined learning disability as having to do with perceptual integration, and verbal and nonverbal expression. Berman (1976) did not attempt to define learning disability.

Identifying the learning disabled child is also a variable that needs stricter control. There is no universally accepted measurement for learning disability. The *Wechsler Intelligence Scale for Children* (Wechsler, 1974), is the only instrument common to most of the studies done to date, but the use of the test results shows a wide variance.

The effect these two problems have on research efforts is summarized in a report issued by the Law Enforcement Assistance Administration (1976):

> When one of the critical variables (LD) has no objective operational definition and no objective metrics for measuring the degree of its presence or absence, the technical aspects of instrumentation, testing procedure, and data analysis become critical factors in assessing not just the precision of conclusions, but whether they mean anything at all.

The first problem could be solved if all the professions concerned with the learning disabilities/juvenile delinquency relationship would adopt a common definition. Recent federal legislation requiring education for all handicapped children has provided such a definition.

> "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The

> term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (*Federal Register* 1977)

The problem in identifying the learning disabled child might not be solved so readily. The same federal legislation that provided a very specific definition of learning disability only provided general parameters for identifying the condition. An objective measurement criteria will be needed before appropriate research can be designed and conducted.

A relationship between learning disabilities and juvenile delinquency implies that because a child is handicapped by a learning disability this could ultimately result in delinquent behavior. Two theoretical positions regarding this causal relationship, the school failure rationale and the susceptibility rationale, are examined. Because research using statistical analysis creates the validity questions mentioned earlier some researchers have relied on quantitative and observational data. Studies, often cited in defense of the learning disabilities/juvenile delinquency relationship, are reviewed. Of the many factors believed to influence school achievement and/or juvenile delinquency socioeconomic variables probably head the list. Various studies citing the effect of socioeconomic variables are noted. Using the socioeconomic factors as a beginning point, a study investigating social class indicators and the relationship between learning disabilities and juvenile delinquency is reported.

The School Failure Rationale

An unrecognized learning disability is the catalyst for school failure, dropout, and juvenile delinquency according to the school failure rationale. It refers to three immediate effects of the learning disability: adults perceive the child as a disciplinary problem, the child is handicapped in achieving academically, and he is ridiculed by his social peers, (Murray, 1976). Berman (1975) has graphically described this sequence.

> The cycle begins with early problems at home. The child was showing perceptual and attention problems even prior to school, but the behavior was written off as "ornery" or "uncooperative" personality. The child enters the early grades of school already accustomed to the fact that he won't be able to do things as well as expected of him, that he will fail and be humiliated continually. This prophecy is fulfilled in school as teachers, considering the child "a behavior problem", punish and ridicule him for failures or for behaviors that he cannot control. The child begins to think of himself as a loser, as someone who can never hope to live up to what people expect of him. . . . Eventually he's suspended, drops out or is thrown out of school to roam the streets, and the inevitable road to delinquency is well under way.

Berman is supported in his description by other professionals and practitioners in the field, (Jacobson, 1974; Mulligan, 1974). Jacobson indicated that, "*delinquent behavior grows from schoolroom frustrations experienced by the child . . . who is handicapped by a learning disability.*"

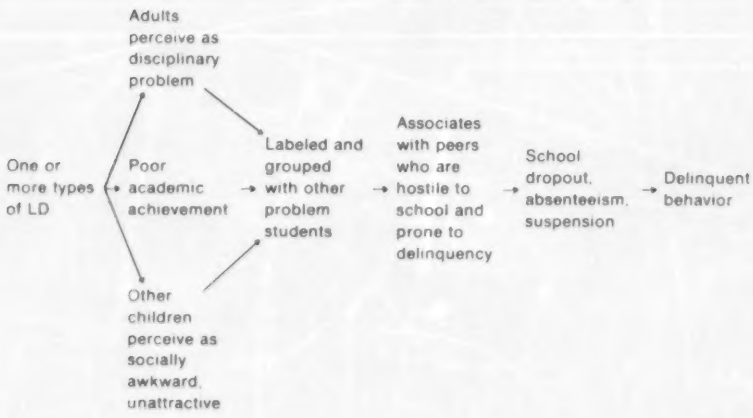
The emotional and psychological impact that labeling may have on a child and the response it elicits from adults and peers is another important factor in the school failure rationale. Grouping children who have behavioral problems may actually contribute to delinquency, (Murray, 1976). Sabatino (1973) reported that since delinquency is learned behavior, it follows that children would learn delinquent behavior by association with other children known to have behavioral problems. Research indicates that delinquent behavior is, in fact, greatly influenced by peer association, (Elliott and Voss, 1974). Some researchers are convinced that "*Labeling's causal role is substantial and proven*," (Murray, 1976). Others question these conclusions and suggest that behaviors which follow labeling are not so much caused by the label as they are predicted by it. A study of long-term consequences of labeling did not reveal significant detrimental effects on young adults who were labeled delinquent in school, (Pink and Noblit, 1977).

Motivation to commit delinquent acts may come from three possible sources: the need to compensate for continual failure, economic needs brought on by the lack of marketable skills, and the problem of too much idle time subsequent to school dropout, (Murray, 1976). The school failure rationale is illustrated in Figure 1.

The school failure rationale is viewed with skepticism by opponents of the relationship. There is some consensus that learning disabilities may be responsible for school failure, and that academic failure may be responsible for delinquent behavior among a small portion of youth who end up in juvenile courts. However, there are too many other factors which contribute to school failure and/or delinquency. Such factors include psychological attributes, poverty, broken homes, social disadvantagement, cultural alienation, emotional disorders, and socialization by delinquent peers, (Sabatino, 1973; Murray, 1976; and Herbert, 1978).

The school failure rationale implies that school dropout is a key event in producing delinquency. However, Elliott and Voss (1974) demonstrated

FIGURE 1
The School Failure Rationale Linking LD and Delinquency (Murray, 1976)


Adults perceive as disciplinary problem
One or more types of LD
Poor academic achievement
Labeled and grouped with other problem students
Associates with peers who are hostile to school and prone to delinquency
School dropout, absenteeism, suspension
Delinquent behavior
Other children perceive as socially awkward, unattractive

in a longitudinal study that delinquency rates are higher before dropout. They also found that *educationally handicapped* dropouts did not have significantly higher delinquency rates than dropouts who were *intellectually capable*.

The Susceptibility Rationale

The susceptibility rationale for the causal relationship of learning disabilities and juvenile delinquency argues that certain behaviors and personality characteristics cause problems for the learning disabled child in the classroom and in social relationships. Children with learning disabilities have been described as impulsive, insecure, having poor judgement, and lacking positive personality characteristics, (Miller and Windhauser, 1971; Brutten, Richardson, and Mangel, 1973; Mauser, 1974). Studies by Bryan (1974, 1977) have consistently shown that learning disabled children have difficulty in perceiving social cues and in responding appropriately to those cues.

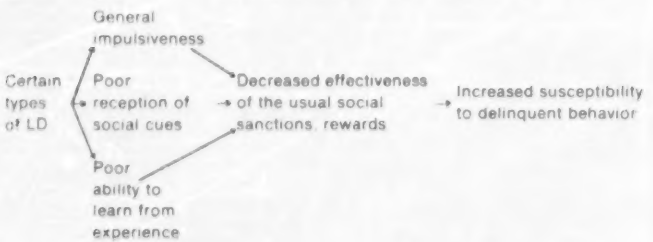
Brutten, *et al.*, (1973) asks, "Is it reasonable to believe that the behavior traits that mark many learning disabled children . . . if not diagnosed and treated might make these children as incorrigible in society as they are in school?" According to the susceptibility rationale the personality characteristics of the learning disabled child do contribute to potential delinquency. This progression from learning disability to juvenile delinquency is illustrated in Figure 2.

Arguments opposing the susceptibility rationale are based on empirical evidence. If it is true that certain personality characteristics common to learning disabled children make them more susceptible to delinquency, then one would expect a high incidence of the particular personality type in delinquent populations. Research has shown that only a small proportion of delinquent youth have these characteristics, (Sullivan, Grant, and Grant, 1957; Quay, 1972).

Quantitative and Observational Studies

In discussions of a causal relationship between learning disabilities and juvenile delinquency, two types of studies have generally been done—quantitative and observational. Considered together these studies offer a substantial case for the existence of a relationship.

FIGURE 2
The Susceptibility Rationale Linking LD and Delinquency (Murray, 1976)


General impulsiveness
Certain types of LD
Poor reception of social cues
Decreased effectiveness of the usual social sanctions, rewards
Increased susceptibility to delinquent behavior
Poor ability to learn from experience

Compton (1974) tested 444 adjudicated delinquents for learning disabilities and found that 90 percent were having special learning problems. The Comptroller General (1977) reported that in prevalence studies conducted by his office, "Of the 129 juveniles tested in two states, 33 (26 percent) were found to have primary learning problems." Berman (1975) conducted a study and found that the discrepancy between verbal and performance intelligence scores as measured by the Wechsler Intelligence Scale for Children, (Wechsler, 1974), were significantly greater in the delinquent group compared to the nondelinquent group. He stated that 56 percent of the delinquent group had deficit adaptive abilities. In subsequent studies (Berman, 1976), it was found possible to classify 87 percent of the delinquent and 78 percent of the nondelinquent boys on the basis of their neuropsychological profiles. "It is apparent," he said, "that the level of performance and patterning of the abilities and deficits is markedly different for the two groups."

Observational data in support of the causal relationship is generally more abundant and credible. Observations and case studies have been recorded by juvenile judges, probation officers, psychologists, educators, medical doctors—all suggesting that the youth they encounter daily often exhibit specific learning disabilities, (Mulligan, 1974; Lewis, 1978; Katzman, 1978; Drake, 1978). Poremba (1975) observed that over 50 percent of the youth in his sample had indications of minimal brain damage. Mauser (1974) was able through observation of youth in his care to identify many characteristics which were common to both learning disabled and delinquent youth. Though observational data does not make the same case as empirical research, the combined observations of many respected professionals cannot be ignored.

SOCIAL CLASS INDICATORS RELATED TO SCHOOL ACHIEVEMENT AND DELINQUENCY

Socioeconomic factors are often identified as causes of juvenile delinquency. It has been demonstrated that disproportionate numbers of official delinquents come from lower socioeconomic categories, (Reiss and Rhodes, 1961; Gold, 1963; Quay, 1966). A number of studies, however, relying on the use of self-report delinquency scales, indicate that the relationship varies as a function of the definition of delinquency and of social class, (Nye, 1958; Akers, 1964).

It is also evident that a relationship exists between some socioeconomic factors and school achievement, (Polk and Schaffer, 1972). That juvenile delinquents are frequently low achievers in academic areas is generally accepted. Necessarily, a comprehensive study of the learning disabilities/juvenile delinquency relationship would include consideration of socioeconomic influences.

The determination of social class is no simple task. Social class has been traditionally established on the basis of one of three factors: income, occupation, or neighborhood. Cohen (1957), however, argues that assigning social class on the basis of one characteristic alone may result in error. He states ". . . many families which are middle class in economic terms and live in what are known as middle-class neighborhoods may

be decidedly working class in terms of the experiences they provide their children."

A breakdown of social class into specific indicators may be more accurate and thus have more predictive value in school achievement and delinquency. Glueck and Glueck (1962) in an analysis of family environment and delinquency, found that family size, presence and compatability of parents at home, and income level could be used conjunctively in predicting delinquency. Social class indicators identified by West and Farrington (1977) were shown to be extremely accurate in predicting delinquent behavior when at least three occurred simultaneously. These factors included low income, large family size, parental criminality, low intelligence, and poor parental behavior. A study on mental ability test performance (Bradley, Caldwell, and Elardo; 1977), found that social class indicators were more accurate predictors of success than socioeconomic status alone.

Individual social class indicators have been frequently tested in relation to delinquency and school achievement. Occupation of father and income level have been used historically as obvious indicators of social class, (Blau and Duncan, 1967). A relationship between school achievement and job status was noted in the studies of Schroder, Crawford, and Wright (1971). Similarly, Kennet (1972) found the mean intelligence quotient of children from families of professional, semi-professional and managerial status to be significantly higher than the mean intelligence of children having fathers employed as skilled workers, supervisors, salesmen, and semi- and unskilled workers. Relating occupation to delinquency, Robins (1965) states ". . . father's having a manual instead of a white collar job was found to be related to official delinquency."

The education level of the father has proven to be a reliable predictor of cognitive performance and school achievement (Thorndike, 1973; Schipman, 1977), as well as a factor related to the development of delinquency, (Robins 1965). Education may also affect conditions of the home that have been independently associated with school performance and/or delinquency. Items such as child appropriate books or magazines and newspapers are more likely to be found in homes where parents have attained higher levels of education. The quality of newspapers and the number of magazine subscriptions maintained have been demonstrated to be related to academic performance, particularly in older children (Schroder, *et al*., 1971; Maynard, 1977).

The relationship between family size, juvenile delinquency and low school achievement has been clearly established (Glueck, 1961; West, 1967, Thorndike, 1973; Kennet, 1973; Rutter, 1975).

Maynard (1977) reports that the presence of both parents in the home is related to school attendance and performance. Specifically reading and vocabulary skills are noted as being higher. Gold (1963) showed that the presence of two parents contributes to family attractiveness which serves as a control of delinquency.

Other social class indicators cited as significant in relationship to school achievement and delinquency are the use of community services

(West, 1967; Schipman, 1977), family recreation (Glueck and Glueck, 1961), and religious preference (West and Farrington, 1977).

SUMMARY

This literature review suggests that the question of a causal relationship between learning disabilities and juvenile delinquency is unresolved. Both quantitative and observational data indicate that a higher prevalence rate of learning disabilities is found in delinquent samples than would be expected in a normal population. But conclusive evidence that learning disabilities cause juvenile delinquency is not available.

The research reviewed which establishes a relationship between social class indicators, school achievement, and juvenile delinquency confounds the question of a learning disabilities/juvenile delinquency relationship. The simultaneous occurence of all three conditions suggests a complex relationship.

The literature reviewed provides the basis on which to investigate the differences between learning disabled adolescents, and learning disabled and delinquent adolescents in relation to selected social class indicators.

SOCIAL CLASS INDICATORS AND THE RELATIONSHIP BETWEEN LEARNING DISABILITIES AND JUVENILE DELINQUENCY

The purpose of this study was to investigate the relationship between learning disabilities and juvenile delinquency. Specifically, it was to determine what differences existed between delinquent and nondelinquent learning disabled youth on selected social class indicators. The social class indicators tested in the study included occupation, education and income levels, presence of both parents in home, music listening preference, family size, frequency and type of family vacation, ownership and value of family dwelling, religious preference, number and type of magazine and newspaper subscription maintained, and participation in school functions.

METHOD

Subjects

Forty-nine high school students ranging in age from 14 to 18 years participated in the study. Nineteen of the subjects were learning disabled and enrolled in a special education program. The remaining 30 subjects were nondisabled students drawn from the regular program. Subjects were assigned to one of four groups on the basis of program placement and delinquent behavior.

Two experimental groups were comprised of learning disabled students, Group 1 (LD/JD) being those identified as delinquent and Group 2 (LD) as nondelinquent. Regular program students comprised Group 3 (JD) and 4 (R), identified as delinquent and nondelinquent respectively.

Procedure

The learning disabled students in the study were diagnosed through the standard public school referral process. Each student received an in-

dividual psychological examination and was placed in the special education program on the recommendation of a multidisciplinary team.

Determination of delinquency was based on three procedures. Subjects who had been adjudicated, subjects identified as known delinquents, and those identified by a self-report delinquency scale (Broder, Peters, and Zimmerman, 1978) were assigned to one of the delinquent groups, 1 (LD/JD) or 3 (JD).

Social class data was provided by parents of the students. Parents were contacted by letter and surveyed with respect to the selected social class indicators.

RESULTS

The chi-square statistic, used in the analysis of the groups, revealed significant differences among the four groups for eight social class indicators. This was accomplished using 4 × n crosstabulation tables. Additionally, seven variables exceeded the acceptable probability of .05. These included: occupation, education, family size, home value, and religious preference, significant at the .01 level. Income and participation in school functions were significant at the .001 level. These results, indicating χ^2 and the degrees of freedom are presented in Table 1.

In order to more clearly define the differences noted in the four-way analysis, the chi-square test of significance was applied using 2 × n crosstabulation tables:

(A) Group 1 (LD/JD) to Group 2 (LD)
(B) Group 3 (JD) to Group 4 (R)
(C) Group 1 (LD/JD) to Group 3 (JD)
(D) Group 2 (LD) to Group 4 (R)

Family size was the only social class variable observed to be significant in comparing Groups 1 (LD/JD) and 2 (LD). Comparisons of Groups 3 (JD) and 4 (R) revealed income, religion, and participation in school functions as significant variables. Table 2 summarizes these results. Significant

TABLE 1
Across Group Differences

Social Class Indicator	χ^2	Degrees of Freedom
Occupation	18.30	6
Education	14.50	3
Income	22.48	6
Family Size	15.42	6
Home Value	10.54	3
Newspaper	12.10	6
Religion	12.00	3
School Functions	27.24	3

$p < .05$

TABLE 2
Group Differences—Learning Disabilities

Social Class Indicator	Disabled I(LD/JD)–II(LD) χ^2	Disabled I(LD/JD)–II(LD) Degrees of Freedom	Nondisabled III(JD)–IV(R) χ^2	Nondisabled III(JD)–IV(R) Degrees of Freedom
Income			6.20	2
Family Size	0.009[a]			
Religion			3.72	1
School Functions			3.87	1

$p < .05$
[a] Fisher's exact test

differences were found between Group 1 (LD/JD) and 3 (JD) for family size. When Groups 2 (LD) and 4 (R) were compared, five social class indicators were observed as significant: occupation at the .05 level; education, income, and type of newspaper at the .01 level; and participation in school functions at the .001 level of significance. These results are reported in Table 3.

DISCUSSION

The absence of significant differences between the learning disabled/delinquent and learning disabled/nondelinquent groups suggests that the two groups are similar in social class status. Between learning disabled/delinquent and non-learning disabled/delinquent groups an absence of significant differences is also observed, suggesting that these two groups are similar in social class. From these observations, it may be inferred that learning disabled students do not differ from delinquent students in social class status.

TABLE 3
Group Differences—Delinquency

Social Class Indicator	Delinquent I(LD/JD)–III(JD) χ^2	Delinquent I(LD/JD)–III(JD) Degrees of Freedom	Nondelinquent II(LD)–IV(R) χ^2	Nondelinquent II(LD)–IV(R) Degrees of Freedom
Occupation			5.80	2
Education			7.38	1
Income			14.85	2
Family Size	5.81	2		
Newspaper			8.84	2
School Functions			21.50	1

$p < .05$

In contrast, significant differences were observed when regular students were compared to learning disabled students and to delinquent students. Differences found in occupation, education, and income suggest that the social class status of regular students is not similar to that of the other groups.

The present data suggest that socioeconomic class as represented by selected social class indicators is related to learning disabilities and to juvenile delinquency. It further indicates that learning disabled students are more alike in social class status to delinquent students than to regular students. This study supports prior research which indicated a relationship between both, social class and school achievement, and social class and delinquency.

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THE EMOTIONALLY DISTURBED DELINQUENT ADOLESCENT: MANIFESTATIONS OF PHYSICAL AND SEXUAL ABUSE

Stephen J. Bavolek

INTRODUCTION

For many decades there has been considerable concern about the determinants and consequences different child-rearing practices and parenting attitudes have upon the developing personality of the young child. Although researchers have had difficulty agreeing with the specific consequences of parent-child interactions, the majority have supported the theory that early parent-child interactions have a marked influence upon the future behavior of the child. This theory of human development suggests that the first years of life have crucial effects upon later development and adult characteristics. Yarrow (1961) states:

> The significance of early infantile experience for later development has been reiterated so frequently and so persistently that the general validity of this theory is now almost unchallenged. (p. 463)

Since the general inception of this theory, never before in our country's history has there been such considerable interest in parent-child interactions as the present. This marked attention may be attributed to the following two factors.

First, there is a growing societal awareness of the alarming numbers of children who are physically and sexually abused each year at the hands of their caretakers. Estimates of physical abuse in the United States exceeds one million suspected cases annually. Sexual abuse which involves children under 18-years-of-age in incest, child prostitution, and kiddie pornography border on 2.25 million cases. It is further estimated that approximately 2,000 children die each year as a result of abuse. These figures make child abuse one of our country's greatest cripplers and killers of children.

Second, concern has risen across the country over the rising incidence of violent and anti-social behaviors occurring among school-age adolescents. In 1977, it was reported that American school children committed 100 murders, 12,000 armed robberies, 9,000 rapes, and 204,000 aggravated assults (Cronley, 1978). Many of these violent acts occurred against teachers, parents, or other youths. Additionally, school-age youth were responsible for 270,000 school burglaries, and vandalized over $600 million worth of school property. Reports on juvenile crime have shown an increase

by 245 percent over the last 13 years (Cronley, 1978). It is reported that one out of nine American youths will be arrested and in court before the age of 18 years.

Along with the growing crime rate, an increasing number of adolescents are attempting and committing suicide, becoming addicts to alcohol and drugs, and are running away from home. Holinger (1978) reports an increase of 22 percent in the suicide rate among adolescents. Today, suicide is the third leading cause of death among adolescents behind accidents and homicides. Nationwide, it is reported that over 5.5 million youngsters use illegal drugs; 500,000 teenagers are alcoholics (Cronley, 1978). Over a four-year period—from 1968 to 1971—youths arrested as runaways in the United States has risen 33 percent in 10 to 17 year olds (U.S. Department of Justice, 1972).

Studies, which have examined the aforementioned phenomena, point an accusing finger at the parents, and imply that the major cause of these problems stems from unhealthy home environments. Lack of parental guidance, emotional deprivation, parental brutality, broken homes, wife battering, alcoholism, and parental sexual promiscuity are often identified as factors which have a significant impact upon the development of violent and acting out behaviors in children which are often carried over into adolescence and adulthood. Experts concur that children who are reared in unhealthy environments generally learn how to be aggressive, violent, abusive, and delinquent by identifying with their parents.

IDENTIFICATION WITH THE AGGRESSOR

The concept of parental identification has been recognized as an important process through which the child internalizes parental characteristics which contribute to the development of the child's personality (Erikson, 1950; Freud, 1955; Kolhberg, 1964). The child selects an adult model usually a parent and attempts to simulate some segment (large or small) of the model's behavior. Although Sigmund Freud generally ascribed the process to the development of a healthy personality (Fry, 1975), it was Anna Freud who suggested that parental identification played a significant role in the development of an aggressive personality. The term "identification with the aggressor" (A. Freud, 1950) has since been recognized as an important process through which the child internalizes aggressive parental characteristics into his/her personality.

According to Steele (1970), the concept of identification with the aggressor plays an important role in the perpetuation and expression of abusive and delinquent behaviors in adolescents and adults.

Steele claims that abusive parenting attitudes and child rearing behaviors are learned by the child during the developmental stages of childhood through the process of identification. The child, in an effort to gain some measure of self-protection and mastery, identifies very strongly with the aggressor and develops a very deepset pattern of discharging aggression against the outside world in order to manage his/her own insecurities. These learned patterns of behavior are often then perpetuated in adult life where the parent, who was abused as a child, may replicate both the parenting attitudes and child rearing behaviors that she/he experienced

during the process of growing up. The cycle, when repeated, transmits these learned abusive parenting attitudes and child rearing practices to yet another generation of children (Steele, 1970). Although the theory of abuse perpetuation through identification with the aggressor lacks the support of an empirical data base, experts in child abuse generally accept the validity of the theory, based on available clinical evidence.

In seeking to explain the development of delinquent behaviors in adolescents, Bender and Curran (1940) found, among other etiological factors, that the homicidal adolescent identified with the aggressive parent(s). Curtis (1963) described the tendency of a child to identify him/herself with an aggressive parent and to pattern after that behavior. Lystad (1975) had indicated that identification with the aggressive parent occurs among adolescents despite strong wishes of the adolescent to be different. Corder, Ball, Haizlip, Rollins, and Beaumont (1976) found in their study of 30 homocidal adolescents, that the subjects were born into homes that typically showed brutality and instability.

The aforementioned studies strongly indicate that the development of delinquent behaviors in adolescents partially results from earlier childhood identification with the aggressive parent(s). It has been further suggested that the concept of identification with the aggressor, when related to child abuse and neglect, has important implications relative to the perpetuation of abusive parenting and child practices from parent to child. Although existing research has identified the parenting attitudes and child rearing practices of known child abusers (Bavolek, Kline, McLaughlin, and Publicover, 1978; Martin, 1976; Spinetta and Rigler, 1972; Steele, 1975), there is a void of research which has examined the parenting behaviors of abusive parents as they relate to the development of delinquency in adolescents. In light of the growing research, which suggests an association between child abuse and delinquency (Clark, 1976; Steele, 1975), further investigation into the parenting and child-rearing practices of abusive parents may provide insights into the nature of delinquency and child abuse, and how these behaviors are learned and perpetuated from parent to child.

THE PARENTING AND CHILD REARING ATTITUDES OF ABUSED AND NON-ABUSED ADOLESCENTS

Research recently completed by Bavolek, *et al.*, (1978) has identified four parenting constructs of abusive parents. These four constructs represent a synthesis of the parenting attitudes and child rearing practices of known child abusers. The information set forth in Table 1 provides a description of each of the four abusive parenting constructs.

Utilizing the four parenting constructs of abusive parents, the author and his associates set out to assess the parenting and child-rearing attitudes of abused and non-abused adolescents. The goal of the research was to determine whether adolescents, who previously had been abused or neglected by their caretakers, would express significantly more abusive attitudes towards parenting and child-rearing than non-abused adolescents. To test the theory that identification with the aggressor plays an important role in the perpetuation of child abuse, the Adolescent Parenting Inventory

TABLE 1
Abusive Parenting Constructs

Construct A: *Inappropriate parental expectations of the child.*

Beginning very early in the infant's life, abusing parents inaccurately perceive the skills and abilities of their child. The infant is expected to perform in a manner incongruent to what may reasonably be expected for his/her developmental stage. The basis for this problem stems from the abusing parents' lack of a knowledge base relative to the capabilities and needs of a child at each developmental stage. Treated as if the child were older than he/she really is, the child is often left to care for him/herself. Often, inappropriate expectations surround such activities as eating, bathing, toileting, etc.

Construct B: *Inability of the parent to be empathically aware of the child's needs.*

Empathic awareness of a child's needs entails the ability of a parent to understand the condition or state of mind of the child without actually experiencing the feelings of the child. Abusing parents often demonstrate an inability of being empathically aware of their infant's or child's basic needs. Based on a fear of "spoiling" their child, abusing parents often ignore their child which results in the child's basic needs being left unattended. The child is seldom loved or nurtured. A high premium is placed on the child being good, acting right, and learning to be obedient. However, what constitutes "good" behavior is seldom clarified.

Construct C: *Strong parental belief in the value of punishment.*

Physical attacks by the abusing parent are not often a haphazard, uncontrolled, impulsive discharge of aggression by the parent onto the infant. On the contrary, studies appear to indicate that abusing parents utilize physical punishment as a unit of behavior designed to punish and correct specific bad conduct or inadequacy on the part of the child. Abusing parents not only consider physical punishment a proper disciplinary measure but strongly defend their right to use physical force.

Construct D: *Role reversal.*

Abusing parents often look to the child for satisfaction of their own emotional needs. Usually described as a "role reversal," the child is expected to be the source of comfort and care; to be sensitive to and responsible for much of the happiness of his/her parents. The child is further expected to make life more pleasurable for the parents by providing love, assurance, and a feeling that the parent is a needed, worthwhile individual.

(API) was developed as the instrument by which the parenting attitudes of abused and non-abused adolescents would be measured. The API is a parenting inventory designed from the four abusive parenting constructs described in Table 1. Items on the inventory allow the respondent an opportunity to strongly agree to strongly disagree with each idea. Agreement with the items on the API indicates a degree of favorableness to abusive parenting and child-rearing practices. Disagreement with the

items indicates an unfavorable response. Upon completion of the API, the respondents' score is calculated in each of the four abusive parenting constructs to determine an index of expressed abusive attitudes.

The results generated from the administration of the API to abused and non-abused adolescents in the states of Utah and Idaho indicate the following:

1. Abused adolescents expressed significantly more abusive attitudes ($p < .001$) towards parenting and child rearing than non-abused adolescents in each of the four parenting constructs.

2. Male adolescents in both groups, abused and non-abused, expressed significantly more abusive attitudes ($p < .001$) in each of the four parenting constructs than females, both abused and non-abused.

3. Analysis of the data showed that, based on a respondent's score, each of the individual constructs was capable of predicting membership in each of the two groups, abused and non-abused.

4. It was concluded from further analysis that scores based on the performance on the inventory items associated with Construct B: *Inability of the parent to be empathically aware of the child's needs*, would be sufficient to descriminate between the target groups, abused and non-abused adolescents.

The findings of this study offer additional support to the theory of identification with the aggressor as a process by which abusive parenting behaviors may be perpetuated from parent to child. Although longitudinal research needs to be conducted to determine the degree to which abusive parenting and child rearing behaviors will be exhibited in both the abused and non-abused populations, the findings strongly indicate that the abused adolescent is a much higher risk for becoming an abusive parent.

CHILD ABUSE AND DELINQUENCY

The findings of the aforementioned study offer significant implications towards the primary prevention of child abuse. Education and treatment in appropriate parenting and child rearing designed around the four abusive parenting constructs may substantially alter the attitudes and subsequent parenting behaviors of abused adolescents. This, in turn, would contribute to the gradual reduction of maltreatment to children.

The findings of the study may also provide additional information and knowledge into the nature of juvenile delinquency as it relates to child abuse. The abused adolescents participating in the study were current residents of a residential treatment center for disturbed delinquent youth located in northern Idaho. The data set forth in Table 2 provides a breakdown of the incidence and type of abuse experienced by the adolescents prior to placement at the institution.

A review of the data displayed in Table 2 indicate that of the total population of 111 adolescents, 86 percent (N = 95) ages 13 to 18 years, had experienced some form of previous abuse or neglect. The incidence figure of 86 percent, however, exceeds the findings of Clark (1976) who found

TABLE 2
Adolescents with Previous Abusive Histories

	Males		Females	
	N	%	N	%
Physical Abuse	56	62	6	30
Sexual Abuse	3	3	8	40
Neglect	10	11	2	10
Abandonment	8	9	2	10
No Previous History of Abuse or Neglect	14	15	2	10
TOTALS	91	100%	20	100%

68 percent of the delinquent population in his study with histories of abuse and neglect.

Further examination of the data in Table 2 indicate that physical abuse was the predominently abusive experience in males (62 percent); while sexually abusive experiences most commonly occurred among females (40 percent). These data assimilate the findings of other studies which found a higher percentage of reported physical abuse among males, and sexual abuse among females (Goode, 1971; Welsh, 1978).

In verifying indications of abusive backgrounds, the author was impressed by the social histories of the abused adolescents, which indicated that a substantial number of adolescents had been involved in truancy, running away from home, attempted suicide, drugs, sexual promiscuity, previous pregnancies, assault, murder, stealing, and vandalism prior to placement at the institution. As noted in the literature, these behaviors typically examplify previous histories, to some degree, of parental emotional deprivation, rejection, brutality, and exploitation.

Taking into account the significant differences in the parenting and child rearing attitudes of abused and nonabused adolescents, and the substantial number of abused adolescents who were identified as delinquents, further examination of the four abusive parenting constructs as they relate to physical and sexual abuse may provide insight into the nature and development of delinquent behaviors in adolescents.

Construct A: Inappropriate parental expectations of the child

Beginning very early in the infant's life, abusing parents tend to inaccurately perceive the skills and abilities of their child. Steele and Pollock (1968) found that abusive parents in their study expected and demanded a great deal from their children, and did so prematurely. Elkind (1967) defines *inappropriate parental expectations* as a form of parental exploitation called "ego bolstering," which he claims contributes to delinquency in middle class adolescents.

The effects of inappropriate parental expectations often have debilitating impact upon the personality development of the child. Martin (1976) sug-

gests that when the expectations are impossible to meet, biologically and cognitively, the child perceives him/herself as being worthless, as a failure, and as unacceptable and disappointing to adults. Elkind (1967) indicates that the adolescent may literally quit school and become truant, quit home and become runaways, or quit the families psychologically and become incorrigible. According to Elkind, other adolescents may defy parental and adult authority. They continue to go to school, but refuse to perform; they stay in the home, but refuse to do their chores; they stay out late and go with a group of whom the parents don't approve.

Reactions to excessive and inappropriate parental expectations may lead to more seriously delinquent behaviors (Elkind, 1967; Howell, Emmons, and Frank, 1973). Pregnancy, stealing, vandalism, alcohol, and drug involvement are several ways in which adolescents react to the excessive and inappropriate demands of his/her parent(s).

Construct B: Inability of the parent to be empathically aware of the child's needs

It is reported in the literature that not only do abusing parents have an inappropriate expectation and demand for their child's performance, but also a corresponding disregard for their child's own needs (Bain, 1963; Gregg, 1968; Helfer and Pollock, 1967; Hiller, 1969; Johnson and Morse, 1968; Korsch, Christean, Gozzi, and Carlson, 1965; Morris and Gould, 1963). The lack of empathic awareness of the child's needs may result in the child failing to develop a basic sense of trust in him/herself and others (Martin, 1976; Steele, 1975), low sense of self-esteem, distorted sense of guilt, and lack of self-confidence (Steele and Pollock, 1968).

As the child grows older, the lack of an empathic environment is tragically viewed in adolescents. Smith and Walters (1978), in their study identifying distinguishing background characteristics between delinquents and nondelinquents, found the lack of a warm, loving, supportive relationship with the father a factor which was highly associated with the delinquency. In comparisons of measures of self-acceptance between delinquents and nondelinquents, Deitz (1969) found the delinquent group to have significantly lower self-acceptance scores which suggests limited internal security and self-esteem. Other studies (Bowlby, 1947; Glueck and Glueck, 1952; Grygier, Chesley, and Wilson, 1969; Kaplan and Reich, 1976; Sabot, Peck, and Raskin, 1969), have shown that maternal and paternal emotional deprivation contribute significantly to the development of delinquent behaviors in adolescents.

In studying the effects of the lack of parental empathic awareness, Kanner (1935) claimed that autism, a form of childhood schizophrenia, was closely connected with an early relationship with an intelligent but emotionally cold mother. Lander and Schulman (1963), in studying delinquents with character disorders, describe how these homicidal adolescents apparently committed murder as shrewdly and carefully planned acts apparently free of guilt. It has been stated by Steele and Pollock (1968) that an apparent result in the lack of an empathic relationship with the parents is the child's subsequent development of a distorted and weak sense of guilt.

The inability of the mother to be empathically aware of her child's needs may be a contributing factor in incest and other forms of sexual abuse. Kaufman, Peck, and Tagiuri (1954) reported that sexually abused girls uniformly saw their mothers as cruel, unjust, and emotionally depriving. Westermeyer (1978) suggests that teenagers engaging in incest with siblings or cousins generally indicate that their family expressed little affection either verbally or nonverbally. Coupled with the findings of studies which indicate that the majority of men who commit incest came from homes which lacked maternal warmth and understanding (Cavallin, 1966; Cormier, Kennedy, and Sangowicz, 1962; Kaufman, *et al.*, 1954; Riemer, 1940; Weinberg, 1955; Weiner, 1962), it is clear to see how the perpetuation of incest may occur in families.

Construct C: Strong parental belief in the value of physical punishment

Closely interwoven with the inappropriate misperceptions of their child's abilities, and the lack of empathic awareness of their child's needs, is the abusing parent's strong belief in the value of physical punishment. Wasserman (1967) found that abusive parents not only considered punishment a proper disciplinary measure, but strongly defended their right to use physical force.

Physical attacks by abusing parents are not often a haphazard, uncontrolled, impulsive discharge of aggression by the parents onto the child. On the contrary, studies appear to indicate that abusive parents utilize physical punishment as a unit of behavior designed to punish and correct specific bad conduct or inadequacy on the part of the child (Davoren, 1975; Steele, 1975; Wasserman, 1967).

Perhaps no other inappropriate parenting behavior appears as frequently in the literature relative to child abuse as excessive parental brutality. Most studies agree that the effects of harsh physical punishment upon the child lead to the development of serious violent, disturbed and/or delinquent behaviors (Curtis, 1963; Welsh, 1978). Clement, Rallins, Ervin, and Plutchik (1973) found parental punishment to be one of five non-medical variables associated with violence among delinquents and adult criminals. In examining the family histories of 32 men and women convicted of cruel and violent behaviors, Gibbens and Walker (1954) frequently found early histories of parental brutality. In a similar study, Duncan, Fraizer, and Litin (1958) demonstrated that as children, prisoners often suffered remorseless physical brutality at the hands of their parents. It is a well-documented finding that physical brutality by the parent is clearly associated with violent and delinquent behaviors in adolescents and adults (Duncan and Duncan, 1971, Easson and Steinhiber, 1961; Goode, 1971).

Research examining the effects of excessive parental physical brutality in the development of serious emotional disturbances is prominent. Beckett, Robinson, and Frazier (1956) have reported on the possible etiological significance parental physical assaults have upon the development of childhood schizophrenia. Galdston)1965) submits that many children brought into the hospital for medical treatment, who had been physically

abused by their caretakers, resemble cases of "shell shock" in adults. Many sit motionless, devoid of facial expression and unresponsive to all attempts at evoking recognition of the external world. Green (1978) found a significantly higher incidence of self-destructive behaviors in latency-aged, abused pre-adolescents than in a control group of non-abused preadolescents. The abused children often manifested suicidal attempts and self-mutalitations. Of 138 children adjudged abused or neglected by the Utah Juvenile Court System, Kline and Christiansen (1976) report nearly 16 percent of the abused and neglected subjects were in classes for the emotionally disturbed and facilities for the socially maladjusted.

Construct D: Role reversal

The fourth common parenting behavior among abusive parents has been described by Ackley (1977), Martin (1976), Morris and Gould (1963), and Steele (1975), as a role reversal. Where the phenomenon of a role reversal exists, the child is in an environment where he/she is expected to be sensitive to and responsible for much of the happiness of his/her parents (Martin, 1976). Essentially, the parent acts like a needy child looking to his/her own child as if it were an adult who could provide parental care and comfort (Steele, 1975).

Elkind (1967) suggests that juvenile delinquency in middle-class families is often related to a type of role reversal he identifies as "parental exploitation." In such instances, the teenager is expected to assume the role of the missing parent. In families where the mother is unable to assume her maternal role due to some type of incapacitation, the eldest daughter is often expected to assume the role of the mother. Such is often the case in families were incest occurs (Herman and Herschman, 1977). The father does not assume the wife's maternal role when she is incapacitated and feels his first right is to continue to receive services, sometimes sexual services. In other families, the onset of incest seems to be precipitated by the rejection of the wife in matters of sexual satisfaction (Cormier, *et al*., 1962; Machotka, Pittman, and Flomenshaft, 1967; Weinberg, 1955). Pittman (1976) describes the infantile and dependent mother who reverses the mother-daughter role. By reversing the traditional roles of mother and daughter, the mother assumes with her daughter the relationship she wishes she had with her own rejecting mother. In such instances, the mother passively, and sometimes actively, encourages incestual behavior between her daughter and husband.

Female adolescents involved with incestual sexual abuse often respond to the experiences with feelings of hatred towards the mother and ambivalence towards the father (Kaufman, *et al*., 1954). For some adolescent and adult women who were childhood incest victims and who lacked opportunities for resolving the trauma, sex may become a learned response to a need for affection (Gentry, 1978; Geiser and Norberta, 1976). Herjanic and Wilbois (1978) describe the high incidence of sexual promiscuity in their study among sexually abused adolescent females. Some adolescents feel that they are invested with special seductive prowess and could captivate men simply by looking at them. They uniformly believe that

they seduced their fathers and could seduce any man (Herman and Herschman, 1977).

Limited studies indicate that the majority of the adolescents who have experienced an incestuous relationship will have school difficulties and behave in a hostile and aggressive manner when interacting with authority figures (Coleman, 1978; Kline, *et al.*, 1976). Signs of disturbance in sexually abused adolescents may include depression, acting out and delinquency; specifically, persistent ideas of being damaged, feelings of being dirty, and a sense of worthlessness (Kaufman, *et al.*, 1954; Sloane and Karpinski, 1942; Westermeyer, 1978).

DISCUSSION

The spectrum of abusive parenting practices as they relate to the prevention, intervention, and management of child abuse and juvenile delinquency, have a number of important findings and implications:

1. The degree in parenting pathology within the spectrum of abusive parenting practices is paralleled by the degree of earlier childhood abusive experiences. That is, children who are severely and repeatedly physically and/or sexually abused learn very potent, but tragically inappropriate behaviors relative to parenting and child rearing.

2. It is likely that the majority of adolescents reared in an environment in which parental brutality, emotional deprivation, and sexual exploitation occur, will exhibit problems in their social, emotional, and intellectual growth.

3. Identification with the aggressor, as it relates to delinquent adolescents with previous abusive histories, is a plausible explanation for the perpetuation of abusive and delinquent behaviors from parent to their offspring.

4. The utilization of the four parenting constructs of abusive parents in examining the origins of delinquent behaviors in adolescents provides valuable intervention and treatment insights.

5. The identification of the four parenting behaviors of known child abusers may provide significant input in the development and implementation of parenting programs for junior and senior high school-age adolescents. That is, the four abusive parenting constructs provides specific goals and objectives that should be addressed in programs for appropriate (non-abusive) parenting and child rearing.

Research presented in this paper has attempted to view delinquency as one specific outcome of early and repeated parenting behaviors of physically and sexually abusive parents. If we cannot establish a direct cause-effect relationships between child abuse and delinquency, we can at least establish the co-existence of these problems.

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DYNAMICS OF OVERT AGGRESSION AND THE BEHAVIOR DISORDERED ADOLESCENT

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ABSTRACT

From a theoretical perspective, aggression has been explained by instinctual, psychoanalytic and social learning theorists. Each theory has its own strengths and weaknesses but no one theory is able to totally explain aggression. The topic of aggression among behavior disordered adolescents presents an ever increasing concern for educators when its overt forms are released on others. The extent of aggression in school settings is also described. And the extent to which media influences aggression is discussed.

THEORIES OF AGGRESSION

Many authors seek to explain the origin of the aggressive response but a great deal of controversy exists on the topic. One explanation of aggression (Stern, 1972) is an instinctual theory of aggression as an inborn primitive defense against inner trauma (biotrauma). This response is present in the postnatal stage in the form of agitatory responses. The infant presumably kicks, hallucinates, or jerks in order to maintain homeostatic balance in the womb.

Another explanation of aggression is psychoanalytic. Psychoanalytic supporters have explained aggression as energy being constantly generated by one's bodily processes (Freud, 1959). As aggressive energy builds, it is either released directly or indirectly as socially acceptable or socially unacceptable behavior. Freudians see aggression as ego enhancing if it seeks appropriate expression and ego destructive if it cannot be expressed in appropriate ways.

Social learning theorists conceptualize aggression as a type of behavior (Berkowitz, 1962; Dollard, *et al.*, 1939). Berkowitz (1962) views aggression as a behavior, either overt or covert, whose goal it is to inflict injury on some person or object. Such an aggressive response is usually precipitated by frustration.

AGGRESSION IN THE SCHOOLS

As the child matures chronologically, control of aggressive behavior is crucial. Primitive forms of aggression such as striking others or destroying objects are more tolerable for children than for adolescents or adults.
 In addition, the sheer size, strength, and agility of the adolescent as op-

posed to the child creates yet greater concern regarding aggression in youth.

With increased reports of teacher-directed hostility, peer violence and vandalism, aggression among juvenile delinquents and nondelinquents are clearly situations warranting investigation.

> In 1972, 1,886 crimes committed against students and school employees were reported in the Seattle school system, ranging from homicide to possession of firearms. In the United States an estimated 70,000 physical assaults occur annually in the public schools. These assaults range from shooting deaths to beatings of school employees. A survey conducted between 1970 and 1973 reported 362 teachers were assaulted in the Dayton, Ohio, schools and 252 were assaulted in Kansas City, Missouri. (Bayh, 1975).

Most of these assaults were committed by adolescents.

Surprisingly, the principal victims of these aggressive acts in our educational systems are not the teachers or administrators, but the students (Bayh, 1975). In the San Francisco schools in 1972, one student was killed and five others wounded due to knife attacks. Although thousands of students are assaulted each year in schools across the country, many student assaults are not reported because of fear of reprisal.

Aggression against the school and individuals within the school structure may be expressed in an overt physical manner, culminating in property destruction. This destructive behavior toward inanimate objects is referred to as instrumental aggression. Property destruction, or vandalism, inflicts massive destruction on schools throughout the nation. An estimated one-half billion dollars per year represents a conservative cost of school vandalism (Bayh, 1975). In Los Angeles, the superintendent of schools estimated that between 1968 and 1973 school vandalism cost his school approximately $11 million dollars (Bayh, 1975). At the beginning of 1974, the average cost per school district for vandalism was over $60,000. If vandalism could be decreased, additional services and materials could be purchased to help all school-aged children.

Verbally abusive language also represents a type of aggression. The power of obscenity has been studied (Bloom, 1977; Fenichel, 1945). Bloom (1977) noted that children and adolescents may swear for many reasons. Swearing may be an expression of frustration and anger. Swearing may also be an attention seeking device or a means of provoking adults. Swearing can also serve to disrupt activities. Expression of invectives may also indicate a bid for peer approval or lack of other more socially appropriate forms of self-expression.

Until recently, few attempts have been made to try and understand the dynamics of profanity. In many educational settings, when a student engages in profanity, many teachers overreact by expelling the student (Bloom, 1977). Often there is no attempt to analyze the reasons why such behavior was emitted. Teachers need to be sensitive to preceding and subsequent events surrounding the verbally aggressive behavior of children and adolescents emitting profanity. Is such behavior being engaged in to a high degree and over extended periods of time? Quay and Werry (1972) cited that profanity was one of the characteristic behaviors associated with

conduct disordered children, some personality problem children, and inadequate-immature children. The act of profanity may be, in reality, a plea for aid.

A point requiring clarification revolves around which children and adolescents engage in physically aggressive behaviors and vandalism. Bayh (1975) failed to gather information regarding possible problems of children and youth exhibiting aggressive behavior. Little data exists, for instance, which indicates whether or not most physical assaults and vandalism are carried out by adolescents who might be behavior disordered. Further, there is currently no strong evidence to determine whether many aggressive adolescents are learning disabled or mentally retarded. The relationship of cultural differences and aggressive behavior is also in need of investigation.

MEDIA AND AGGRESSION

Thus far, three types of aggression have been discussed: physical, instrumental, and verbal. Although almost all adolescents express aggression in these three ways, juvenile delinquents express aggression to a higher degree and higher frequency. Another external variable contributing to the aggressive response is the media. A very prevalent notion today is that violence can be transmitted through movies, newspapers, television, and comic books.

A great deal of controversy and uncertainty exist as to the possible effects of crime and violence in the mass media. There are those who insist that the high dosage of fantasy aggression will be extremely harmful to children and youth, conditioning them to antisocial modes of conduct (Klapper, 1960; Schramm, *et al.*, 1961; Wertham, 1954). Still others take the opposite view, contending that children and youth can obtain a cathartic release from their own hostile feelings by identifying with a make-believe aggressor (Bailyn, 1959; Riley and Riley, 1954). The vast majority of authors are cautious in their evaluations of media aggression. Also, these authors indicate that extreme aggression and anxiety reactions do occur because of violent scenes in television, movies, newspapers, and comic books, but generally agree that such extreme aggressive reactions occur only if the individual has a predisposition to aggression or anxiety.

Research consistently indicates that frustrated children and adolescents are very likely to be exposed to pictorial media: television, movies, comic books (Berkowitz, 1962). But such individuals may do more than try to escape from reality settings by withdrawing to the world of fantasy. They may focus on media content featuring crime and lawlessness. Experimental results suggest that media violence in the form of movies will tend to incite children and adolescents to later aggressive acts rather than provide a cathartic release of aggressive energy (Klapper, 1960).

Often, the idea is forwarded that the mass media is a major contributor to delinquency and crime. There are no convincing data supporting this contention. Aggression leading to delinquency and crime is a very complex phenomenon and many factors may interact to affect it. At best, the media may constitute a minor part in the delinquency process. If the proper set

of circumstances exist, then the media can influence specific actions in specific situations.

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